

Life-Threatening and Non-Life-Threatening Complications Associated With Coughing

A Scoping Review

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CHEST 2020; 158(5):2058-2073

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e-Appendix 1. Life-threatening and Non-life-threatening Complications Associated with Coughing: A Scoping Review

Search Strings

PubMed search string: Cough/complications[Majr], Limits English OR For recent unindexed articles: cough[tiab] AND complications[tiab] NOT medline[sb], Limits English OR Cough complications with clinical conditions: cough[majr] AND (complication OR complications) AND (cardiovascular diseases[majr] OR gastrointestinal diseases[majr] OR urologic diseases[majr] OR nervous system diseases[majr] OR musculoskeletal diseases[majr] OR eye diseases[majr] OR psychosocial[tiab] OR quality of life[majr] OR respiration disorders[majr] OR skin diseases[majr]), Limits English.

SCOPUS search string: (coughing OR "chronic cough")) AND (INDEXTERMS("cardiovascular disease" OR "eye disease" OR "gastrointestinal symptom" OR "lung complication" OR "musculoskeletal disease" OR "neurologic disease" OR "psychosocial environment" OR "quality of life" OR "skin disease" OR "urogenital tract disease")) AND (INDEXTERMS(complication AND human)) AND (LIMIT-TO (LANGUAGE,"English")).

e-Table 1. Online Data Supplement Contains 247 Studies Meeting Inclusion Criteria as Identified by the Literature Search

<i>Citation/ year</i>	<i>Study design</i>	<i>Cough Complication</i>	<i>Setting of First Author</i>	<i>Age, Sex</i>	<i>N</i>
CARDIOVASCULAR					
Ahn et al. 2008. ¹	Case Report	Migration of implantable port catheter tip from right atrium to the right axillary vein	Seoul, Korea	64, M	1
Aliyev et al. 2012 ²	Case Report	Cough-induced sinus arrest resulting in recurrent episodes of syncope	Istanbul, Turkey	32, M	1
Baron et al, 1987 ³	Case Report	Recurrent cough causing syncope due to AV block, Mobitz II	Tucson, AZ	34 M	1
Bartel et al, 2008 ⁴	Case Report	Paroxysmal coughing leading to closure device dislocation after percutaneous closure of secundum type atrial septal defect	Innsbruck, Austria	56 F	1
Butman et al, 2010 ⁵	Case Report	Cough induced stress cardiomyopathy	Cottonwood, Arizona	82, F	1
Ceponis et al. 2017 ⁶	Case Report	Cough associated with spontaneous arterial gas embolism in patient with chronic necrotizing pneumonia, bullae and brain infarct with death from complications	Durham, N.C. U.S.	78, M	1
Choi et al., 1989 ⁷	Case Report	Cough induced sinus arrest and dizziness and syncope following a cold	Seoul, Korea	63, M	1
Cogbill et al., 1987 ⁸	Case Report	Injection port silastic catheter dislodgement caused by cough in patient with lymphoma and URI	La Crosse, Wisconsin	35, M	1
Dubey et al., 2005 ⁹	Case Report	Cough induced expulsion of peripherally placed central line in patient with multiple myeloma after URI	Patna, India	35, M	1
Hart et al., 1982 ¹⁰	Case Report	Cough Induced complete atrioventricular block with ventricular asystole	London, England	37, F	1

Herr et al., 1992 ¹¹	Case Report	Vertebral artery dissection presenting as a posteroinferior cerebellar artery territory stroke	Salt Lake City, Utah	39, M	1
Irani et al., 1971 ¹²	Case Report	Inspiration- and cough- induced atrioventricular block	Hamilton, Ontario.	77, M	1
Ishii et al., 1987 ¹³	Case Report	Forced cough induced (during coronary angiography) idiopathic pneumopericardium	Miyazaki prefecture, Japan	31, M	1
Jacobs et al., 1991 ¹⁴	Case Series	Central venous (Port-a-Cath) catheter dislodgement due to coughing in 3 patients with cystic fibrosis and 1 with cancer	East Lansing, Michigan	15, M 26, M 18, M 67, M	4
Lee et al., 1999 ¹⁵	Case Report	Cough-induced heart block in patient with CAD	Manhasset, New York	65, M	1
Littmann et al., 2002 ¹⁶	Case Report	Cough associated with Mobitz Type II AV block	Charlotte, North Carolina	52, M	1
Maury et al., 2016 ¹⁷	Case Report	Cardiac luxation in ICU after coughing following right pneumonectomy	Lyon, France	75, M	1
McIntyre et al., 2009 ¹⁸	Case Report	Cough induced AV inhibition and block causing pre-syncope	Ottawa, Ontario, Canada	73, F	1
Omori et al., 1984 ¹⁹	Case Report	Cough-induced tachyarrhythmia	Kyoto, Japan	57, M	1
Papadimos et al., 2006 ²⁰	Case Report	Forceful cough secondary to partial obstruction of an airway by a foreign body followed by aortic dissection	Toledo, Ohio	65, M	1
Reisin et al., 1994 ²¹	Case Report	Cough-induced non-sustained ventricular tachycardia	Ashkelon, Isreal	66, F	1
Ruckdeschel et al., 2016 ²²	Case Report	Cough-induced ventricular tachycardia in a patient with severe ischemic cardiomyopathy who underwent LVAD placement 1 year prior with recent URI	Aurora, CO, USA	69, M	1
Sivam et al., 2014 ²³	Case Report	Spontaneous coronary artery (LAD) dissection associated with coughing in a patient with cystic fibrosis	Camperdown, Australia	45, F	1

Wu et al., 2005 ²⁴	Case Report	Spontaneous migration of a Port-A-Cath into the ipsilateral jugular vein in patient with small cell lung cancer and severe cough	Taipei, Taiwan	69, M 67, M	2
Yirerong et al., 2018 ²⁵	Case Report	Excessive coughing associated with coronary artery dissection	Warwick, Rhode Island	UA, M	1
DERMATOLOGIC					
Kravitz, 1979 ²⁶	Case Report	Cough purpura (petechiae over both eyelids and cheeks) in children with repetitive cough	Springfield, Virginia	3, UA 7, UA	2
Ramneesh et al., 2014 ²⁷	Prospective Study	Wound dehiscence in post-operative period secondary to cough	Patiala, India	UA	9
Santarpino et al., 2013 ²⁸	Case Report	Sternal wound dehiscence from intense coughing secondary to aspiration while eating in an obese cardiac surgery patient	Nuremberg, Germany	67, M	1
Tseng et al., 2007 ²⁹	Case Report	Left giant abdominal wall muscle layer hematoma following violent cough in patient with COPD	Taichung, Taiwan	73, M	1
EAR, NOSE, THROAT					
Fenig et al., 2013 ³⁰	Case report	Diagnosis thyroid cartilage fracture and associated phlegmon formation after a vigorous coughing spell in a patient recovering from a URI	Emergency Medicine, Bronx, NY	47, M	1
Nerurkar et al., 2012 ³¹	Case Report	Subluxated left arytenoid in the anterior position, asymmetry of bilateral vocal processes, obliteration of left cricoarytenoid space after a bout of severe coughing	Mumbai, Maharashtra, India	45, M	1
GASTROINTESTINAL					
Annunziata, 1996 ³²	Case Report	Mallory Weiss tear caused by cough in toddler with URI	Park Ridge Illinois, USA	13 mos, M	1
Lee et al., 2009 ³³	Case Report as Letter to Editor	Spontaneous rupture of gastroduodenal artery pseudoaneurysm following vigorous cough	Taipei, Taiwan	48, F	1
Nensa et al., 2013 ³⁴	Case Report	Esophageal wall rupture, hydropneumothorax and tension pneumothorax after heavy coughing attack	Essen, Germany	68, M	1
Park et al., 2018 ³⁵	Retrospective review	Severe cough induced lumbar hernia and rib fracture in patient with vocal cord cancer	Incheon, Korea	UA, M	1

Sanjay et al., 2007 ³⁶	Postal Survey	Cough identified by patients as the second most common predisposing factor for inguinal hernia	Llantrisant, Wales, United Kingdom	UA, UA	20
Sanyal et al., 1989 ³⁷	Case Report	Percutaneous endoscopic gastrostomy button malfunction in patient severe cough	Richmond, Virginia.	66, M	2
Sengar et al., 2008 ³⁸	Case Report	Prolapse of the rectum with spontaneous rupture of the distal colon and evisceration of the small intestine through the anus in an infant after a bout of coughing and death due to complications	Delhi, India	4 mos, F	1
Shutsha et al., 2003 ³⁹	Case Report	Hepatic cyst rupture after a coughing fit	Gilly, Belgium	67, F	1
Stillman et al., 2015 ⁴⁰	Case Report	Rectus sheath hematoma following violent coughing episodes associated with a URI in a patient on aspirin and NOAC	St. Joseph, Michigan	76, M	1
Stupnik et al., 2008 ⁴¹	Case Report	Spontaneous rupture of a normal spleen after severe coughing 3 rd day post op following thoracic surgery for metastatic cancer	Ljubljana, Slovenia	76, F	1
Toubia et al., 2005 ⁴²	Case Report	Spontaneous rupture of a normal spleen secondary to cough associated with COPD exacerbation	Oklahoma City, Oklahoma	56, F	1
Ulla et al., 2001 ⁴³	Case Report	Cough attack followed by gastric hemorrhage due to intussusception of a gastric fold into the orifice of the gastrostomy tube in a patient multiple sclerosis and recent respiratory infection	Pontevedra, Spain	48, M	1
Vasquez et al., 1999 ⁴⁴	Case Report	Traumatic abdominal wall hernia of portion of liver and small bowel caused by persistent cough in patient with COPD and multiple medical problems	San Diego, California	83, M	1
Wehbe et al., 2008 ⁴⁵	Case Report	Cough inducing spontaneous spleen rupture	Wichita, Kansas	61, M	1
Wergowske et al., 1983 ⁴⁶	Case Report as letter to the editor	Splenic rupture from coughing in patient with bronchitis	Dayton, Ohio	44, F	1
Won et al., 2012 ⁴⁷	Case Report	Spontaneous splenic rupture associated with cough in patient with infectious mononucleosis	Kogarah, Australia	16, F	1
Wurm Johansson et al., 2013 ⁴⁸	Case Report	Gastric perforation after coughing during upper endoscopy	Malmö, Sweden	76, F	1
Weaver et al., 1969 ⁴⁹	Retrospective Review	Cardioesophageal lacerations (Mallory-Weiss Syndrome) with cough as the predisposing factor	Salt Lake City, Utah	UA, UA	2

GENITOURINARY					
Ben Safta et al, 2017 ⁵⁰	Case Report	Strong cough leading to vaginal cuff dehiscence and evisceration of ileal loops in a patient being treated for cancer of the cervix	Tunis, Tunisia	68, F	1
Lee et al., 2000 ⁵¹	Prospective double-blind parallel study	Intolerable cough and cough-related urinary stress incontinence in diabetic postmenopausal women treated with ACE inhibitor	Ping-Tung, Taiwan	UA, F	20
Reichman et al., 2016 ⁵²	Cross sectional questionnaires study	Stress urinary incontinence, with coughing in cystic fibrosis patients was the main cause for leakage (84% or 21/25). A quarter of the overall study population of 122 refrained from coughing up phlegm and from physiotherapy because of urine loss.	Brussels , Belgium	6-59, both M&F	21
Swenson et al., 2017 ⁵³	Secondary Analysis	Greater stress urinary incontinence in obese woman associated with greater cough pressure (OR 3.191, 95% CI 1.326, 7.683; p < 0.01), obese women have higher resting intravesical pressure and also generate more pressure during maximal cough than women with BMI in the normal or overweight ranges.	Ann Arbor, Michigan	UA, F	45
MUSCULOSKELETAL					
Abu-Gazala et al. 2013 ⁵⁴	Case Report	Cough-induced right costal margin rib fracture with separation of the ribs and diaphragmatic rupture resulting in abdominal visceral herniation into the thoracic cavity and subcutaneously	Jerusalem, Israel	50, M	1
Altman et al. 2007 ⁵⁵	Case Report	Paroxysmal tussive episode causing rectus sheath hematoma in patient with a recent URI	New Orleans, Louisiana	45, F	1
Anderton 1972 ⁵⁶	Case Report as Letter to Editor	Prolonged paroxysms of coughing leading to rectus abdominis muscle pulling of insertions over the pubic symphysis in patients with pulmonary coccidioidomycosis	Yuma, Arizona	UA	2
Ayers et al, 2002 ⁵⁷	Case report	Cough causing rib fracture and intercostal hernia in patient with asthma	West Sussex, United Kingdom	68, M	1

Bayram et al, 2014 ⁵⁸	Case Report	Heavy coughing causing rectus sheath hematoma	İzmir, Turkey	67, M	1
Begley et al, 1995 ⁵⁹	Case Report	Episode of coughing causing transverse undisplaced fracture through the left first rib with recent respiratory infection	Dundonald, Northern Ireland, United Kingdom	26, M	1
Bodenheimer, 1948 ⁶⁰	Case Report	Cough causing 2 rib fractures in patient with recent URI	Shreveport, Louisiana	67, M	1
Butensky et al, 2016 ⁶¹	Case Report	Cough causing rib 10 th and 11 th fractures and flank pseudo-hernia in patient with COPD	New York, New York	68, F	1
Chaar et al. 2008 ⁶²	Case Report	Cough causing rib fractures and disruption of the cartilage at the costal margin with herniation of abdominal contents into the chest and across a gap between ribs into the subcutaneous tissue in patient with COPD	New Haven, Connecticut	54, M	1
Cherian et al., 2018 ⁶³	Case Report	Spontaneous right sided lung hernia between 8 th and 9 th rib laterally with intercostal muscle rupture after violent bout of coughing in patient with history of chronic bronchitis	Houston, Texas	61, M	1
Cosgun et al., 2015 ⁶⁴	Case Report	Abdominal rectus sheath hematoma due to cough in elderly patient on antiplatelet therapy in patient with COPD and cor pulmonale	Yozgat, Turkey	83, F	1
Daniel et al., 2008 ⁶⁵	Case Report	Cough-induced left costal margin rib fracture with separation of the ribs and diaphragmatic rupture resulting in abdominal visceral herniation into the thoracic cavity and subcutaneously.	Coventry, United Kingdom	70, M	1
De Luca et al., 2015 ⁶⁶	Case Report	Lung herniation into the left pleura through previous incision after cough in a patient with a history of anterior mediastinotomy	Naples, Italy	52, F	1
De Maeseneer et al., 2000 ⁶⁷	Case series	Rib fractures induced by coughing in patients	Brussel, Belgium	21, F 79, M 47, F	3

Dean et al., 2014 ⁶⁸	Case Report	Acute 5 th rib fracture and chronic non-united 6 th and 7 th right rib fractures associated with repeated and hard cough in patient with cystic fibrosis	Salt Lake City, Utah	37, M	1
Dearlove et al., 2004 ⁶⁹	Case Report	Air emphysema in the neck after energetic cough in a hospitalized child post op from excision of thyroglossal cyst	Pendlebury, United Kingdom	6, UA	1
Elango et al., 2018 ⁷⁰	Case Report	Spontaneous rectus sheath hematoma due to cough on apixaban (DOAC) for atrial fibrillation with recent history of influenza	Detroit, Michigan,	69, F	1
Fein, 1958 ⁷¹	Case Report	Repeated multiple fractures of ribs (6 through 9, right and left) induced by cough over multiple years in patient with bronchial asthma	San Antonio, Texas	65, M	1
Franco et al., 2004 ⁷²	Case Report	Avulsion fracture of the inferior angle of the scapula with deflection of the fragment towards chest wall related to prolonged cough in a patient on chronic steroids with bone insufficiency	Nice Cedex, France	47, M	1
George et al., 2000 ⁷³	Case Report	7 th and 8 th rib fractures at the posterior axillary line with avulsion at the costochondral junction and diaphragmatic rupture with bowel loops in the chest as a complication of violent cough in patient with asthma	Stony Brook, NY	61, M	1
Gradwohl et al., 1987 ⁷⁴	Case Report	Avulsion of the lesser trochanter of femur following an episode of severe coughing in a patient with esophageal cancer	Omaha, Nebraska	64, M	1
Habib et al., 2010 ⁷⁵	Case Report	Disruption of the costal margin between the 8 th and 9 th ribs and combined spontaneous left herniation of both the lung and bowel with subcutaneous emphysema, pneumothorax, pneumomediastinum, and pneumopericardium following an attack of acute bronchitis and coughing	Liverpool, United Kingdom	47, M	1

Han et al., 2005 ⁷⁶	Case Report	Tear of the left lateral internal oblique muscle resulting from cough in patient with COPD and recent URI	Seoul, South Korea	72, M	1
Heckman et al., 2018 ⁷⁷	Case Report	Concurrent spontaneous subcutaneous emphysema in the neck, pneumomediastinum, and pneumorrhachis (air in spinal column) secondary to cough	Jacksonville, Florida	20, M	1
Hillenbrand et al., 2006 ⁷⁸	Case Report	Cough related stress fracture of the 9th right rib, with subcutaneous hematoma and hemothorax and traumatic rupture of the diaphragm and massive right lateral abdominal herniation in a patient with a chronic cough due to chronic bronchitis	Ulm, Germany	59, M	1
Hillman, 1982 ⁷⁹	Case Report	Subcutaneous emphysema, mediastinal emphysema, and pneumoperitoneum in a patient coughing after inhaling soldering fumes	London, United Kingdom	23, M	1
Hjalmarsson, et al., 1993 ⁸⁰	Case Report as Letter to Editor	Subcutaneous emphysema, hemorrhage, and subcutaneous hematoma as a complication of cough induced left rib fracture after severe asthmatic attack	Reykjavik, Iceland	61, M	1
Jabr et al., 2011 ⁸¹	Case Report	Spontaneous lateral abdominal wall hematoma in a patient with severe cough and COPD	Dickson, TN	37, M	1
Jang et al., 2015 ⁸²	Case Report	Hematoma of the left lateral abdominal wall induced by rupture of the left 11th intercostal artery after severe cough	Incheon, South Korea	39, M	1
Kallay et al., 2000 ⁸³	Case Report	Costal margin separation at 8 th costal cartilage with massive left diaphragmatic separation and rupture with loop of colon in left hemithorax due to coughing during asthma exacerbation in obese patient with long standing steroid use	Winston-Salem, North Carolina	63, F	1

Karabulut et al., 2014 ⁸⁴	Case Report as Letter to Editor	Spontaneous retroperitoneal bleeding with extremely large hematoma after severe coughing due to acute bronchitis	Antalya, Turkey	66, M	1
Katrancioglu et al., 2015 ⁸⁵	Retrospective Review	Spontaneous and multiple rib fractures in patients with severe cough with lung disease and/or osteoporosis	Sivas, Turkey	34-77 (mean 55.91 +/- 12.20 years), and 7M (58.4%)	12
Kawahara et al., 1997 ⁸⁶	Case Report and Case Series	Multiple bilateral rib fractures associated with severe coughing due to acute bronchitis and case series of fractures 6th to 9th ribs with a slight predilection for the left side	Fukui, Japan	27, M UA, M5, F32	1 37
Khan et al., 2006 ⁸⁷	Case Report	Transdiaphragmatic intercostal herniation (between 8 th and 9 th ribs) of liver, colon, small bowel and omentum anteriorly and subcutaneous herniation of lungs posteriorly in the same space	Mumbai, India	75, M	1
Kodama et al., 2013 ⁸⁸	Case Report	Cough-induced internal oblique hematoma in patient with gastroesophageal reflux related chronic cough		73, F	1
Kopcsanyi et al., 1969 ⁸⁹	Case Series	Cough fracture in posterior axillary line between the respective insertions of two muscles in the middle third of the ribs in premature Infants	Pecs, Hungary	±3 mos , M 2 F 5	7
Kosałka et al., 2016 ⁹⁰	Case Report	Cough-induced lung intercostal (8 th space) hernia with large abdominal hematoma in patient with COPD exacerbation and death	Cracow, Poland	73, M	1
Kuczkowski et al., 2003 ⁹¹	Case Report as Letter to Editor	Postoperative cough-induced recurrence of spinal anesthesia in the parturient	San Diego, California	29, F	1
Laitinen et al., 1954 ⁹²	Case Report	Osteophytes of the ribs due to cough in patients treated for tuberculosis	Helsinki, Finland	50, M 52, M	2

Litch, 1998 ⁹³	Case Report	Multiple cough induced stress fractures and arthropathy of the ribs at extreme altitude in climber	Kathmandu, Nepal.	UA, UA	1
Long, 1962 ⁹⁴	Case Series	Stress fracture of ribs associated with pregnancy	Palo Alto, California	UA, UA.	9
Lorin et al., 1978 ⁹⁵	Case Report	Fracture of right 4 th and 5 th ribs in psychogenic cough in a child	New York, New York	11, F	1
Ma et al., 2003 ⁹⁶	Retrospective Chart Review and Telephone Survey	Cough and asthma causing inguinal hernia	Taipei, Taiwan, ROC	UA, UA	163
Macedo et al., 2013 ⁹⁷	Case Series	Cough-induced herniation of abdominal contents through the diaphragm and intercostal space (transdiaphragmatic intercostal hernia), associated with rib fracture	São Paulo, Brazil	53, M 71, M 64, M	3
Macias-Robles et al., 2005 ⁹⁸	Case series	Giant hematoma in the rectus abdominis muscle while receiving standard prophylaxis against venous thromboembolism and low dose ASA for ischemic heart disease in elderly patients suffering cough attacks from bronchial infection	Aviles, Spain	75, M 79, F 80, M	3
Nakanishi et al., 2010 ⁹⁹	Case Report	Diaphragmatic rupture, mediastinal shift, with the presence of small bowel loops in the right hemithorax and pleural effusion due to violent cough during tracheostomy for laryngeal cancer	Hamamatsu, Japan	73, M	1
Maqsood et al., 2018 ¹⁰⁰	Case Report	Bilateral hemotympanum secondary to coughing during endobronchial ultrasound-guided transbronchial fine needle aspiration	Birmingham, UK.	64, M	1
Mary Parks et al., 2019 ¹⁰¹	Retrospective Review	Rupture of the costal margin, rib fractures, and lung herniation due to severe coughing fit	Nottingham, United Kingdom	X=62.5 years (range 47-76), M 9	9

Migeot et al., 2013 ¹⁰²	Case Report	Extensive thoraco-cervico-facial subcutaneous emphysema, a pneumomediastinum, and a pneumorrhachis following episodes of violent coughing	Bruxelles, Belgium	19, M	1
Musher et al., 1995 ¹⁰³	Case Report	Progressive fracture of ribs due to cough paroxysmal in patient with pertussis	Houston, Texas	49, F	1
Nelwan et al., 2017 ¹⁰⁴	Case Report	Persistent coughing associated with spontaneous rectus sheath hematoma in patient with dengue fever	Jakarta, Indonesia	58, F	1
Oostendorp et al., 2018 ¹⁰⁵	Case Report	Cough-induced nonunion rib fractures and pulmonary herniation in patient with pneumonia	Amsterdam, The Netherlands	57, M	1
Oren et al., 1988 ¹⁰⁶	Case Report	Cough related stress injuries of the ribs	Kfar Saba, Israel	35, F 36, F	2
O'Shea et al., 2012 ¹⁰⁷	Case Report	Subcutaneous emphysema and a focal intercostal muscle defect in the 9 th intercostal space, with lung and pleural herniation in patient with recent lower respiratory tract infection	Birmingham, United Kingdom	40, F	1
Ozlu et al., 2012 ¹⁰⁸	Case Report	Abdominal wall hematoma between the right internal oblique and external oblique muscles related to severe cough in a patient under antiaggregant and anticoagulant therapy and on an ACE inhibitor	Bolu, Turkey	56, F	1
Papanikitas et al., 2008 ¹⁰⁹	Case Report	Bilateral retrovascular femoral hernia related to cough in a patient with cystic fibrosis	London United Kingdom	34, F	1
Pareja Lopez et al., 2017 ¹¹⁰	Case Report	Right intercostal artery bleeding between the 9 th and 10 th costal curvature with hemothorax and hematoma due to persistent cough in a case of acute exacerbation of COPD	Murcia, Spain	57, M	1
Patel et al., 2016 ¹¹¹	Case Report	Spontaneous rectus sheath hematoma secondary to severe coughing and bronchitis	Internal Medicine, New Jersey, USA	62, F	1

Paulley et al., 1949 ¹¹²	Case Series	Cough- induced rib fracture left side or left posterior axillary line (9, 10, 11 th) in late pregnancy in both primipara and multipara	London, United Kingdom	21, F 25, F 36, F 25, F	4
Prasad et al., 2001 ¹¹³	Case Report	Cough induced 1 st rib fracture in patient with pertussis	New South Wales, Australia	11, M	1
Reper et al., 2012 ¹¹⁴	Case Report	Cough-induced rupture of the right diaphragm and abdominal herniation in patient with COPD	Brussels, Belgium	49, M	1
Roberge et al., 1984 ¹¹⁵	Case Report	Multiple, bilateral rib fractures sustained during a paroxysm of coughing in patient with history of recent bronchitis	New York, New York	72, F	1
Rogers et al., 1996 ¹¹⁶	Case Report	Large anterolateral defect in the left diaphragm, with a 9 th -rib fracture, with extensive herniation of intra-abdominal contents through the diaphragmatic defect into the subcutaneous space of the chest secondary to coughing in obese male	Burlington, Vermont	64, M	1
Sala et al., 2017 ¹¹⁷	Case Report	Right post-traumatic diaphragmatic hernia with dislocation of right upper abdominal viscera herniated into chest in a patient with cough and 20-year history of trauma	Milano, Italy	41, M	1
Sano et al., 2015 ¹¹⁸	Case Series	Cough-induced single and multiple rib fractures	Chigasaki, Japan.	Med = 39.5 (14-86); M 4 F 10	14
Sternfeld et al., 1992 ¹¹⁹	Case Report	Non-displaced fracture of the 6 th , 8 th , 9 th , and 10 th ribs on the left side and the 9 th rib on the right side in patient with persistent cough and post nasal drip	Rehovot, Israel	29, F	1
Warmington, 1966 ¹²⁰	Case Series	Single and multiple rib fractures associated with cough	Enniskillen, Northern Ireland	54, M 68, M 24, F 32, M	4

Yeh et al., 2012 ¹²¹	Case Report	Cough-induced fracture of the left 7 th rib with callus formation in a healthy man with cough for 6 weeks	Taipei, Taiwan, ROC	22, M	1
Yu et al., 2006 ¹²²	Case Report	Intercostal artery rupture that resulted in active hemorrhage and hematoma formation after violent coughing in an elderly hypertensive patient with URI	Taichung, Taiwan, ROC	76, M	1
NEUROLOGIC					
Aaronson et al, 1970 ¹²³	Case Report	Cough Syncope	Chicago, Illinois	41, M	1
Ariturk et al 2012 ¹²⁴	Case Report	Cough Syncope	Diyarbakir, Turkey	59, M	1
Awad et al 2001 ¹²⁵	Case Report	Cough Syncope	Nahariya, Israel	40, M	1
Bahra et al, 1998 ¹²⁶	Case Report	Cough headache	London, United Kingdom	72, F	1
Benditt, et al., 2005 ¹²⁷	Comparison of 3 groups clinical trial	Cough syncope patients exhibit more pronounced hypotension in response to cough than other fainters, and manifest an inappropriate cough-triggered blood pressure-heart rate relationship	Minneapolis, Minnesota	64±7.1 M 7 F 3	9
Berciano et al, 2007 ¹²⁸	Case Report	Cough-induced paroxysmal cervico-brachial pain in patient with Chiari I and cervico-dorsal syringomyelia	Santander, Spain	54, F	1
Buzzi et al, 2003 ¹²⁹	Case Report	Cough causing headache in patient with Chiari I and syringomyelia	Rome, Italy	54, F	1
Chadda et al. 1986 ¹³⁰	Case Report	Cough syncope associated with sinus bradycardia and hypotension	Hyde Park, New York	74, M	1
Chen et al. 2014 ¹³¹	Case Report	Syncope and convulsion induced by coughing in patient with paraspinal abscess	Taipei, Taiwan, ROC	70, M	1
Cordenier et al., 2013 ¹³²	Review	Cough headache, 400 primary and 300 secondary	Brussel, Belgium	UA, UA	700

Derbes et al., 1953 ¹³³	Review of Literature	Paroxysms of cough followed by fainting in patients with asthma (4 deaths in the series)	New Orleans, Louisiana	UA, M, 281 F 9	290
Dickinson et al., 2012 ¹³⁴	Case Report	Cough syncope induced vasodepressor hypotension	Minneapolis, Minnesota	44, M	1
Enamorado et al., 2015 ¹³⁵	Case Report	Acute appearance of carotid pseudoaneurysm with carotid artery dissection after coughing in anticoagulated patient with Bechet's Disease	Seville, Andalusia, Spain	Adolescent, M	1
Ertsey et al., 2000 ¹³⁶	Case Report	Cough headache associated with Chiari type-I malformation	Budapest, Hungary	48, F	1
Fitzsimons, 1998 ¹³⁷	Case Report	Cough syncope resulting in car accident followed by temporary suspension of helicopter pilot duties	Tacoma, Washington	41, M	1
Gelisse et al., 2008 ¹³⁸	Case Report	Cough syncope and seizures	Marseille, France	33, UA	1
Gupta, 2005 ¹³⁹	Case Report	Benign cough headache	Dubai, United Arab Emirates	50 & 36, M	2
Haslam et al., 1985 ¹⁴⁰	Case Series	Cough syncope with epilepsy mimic in 5 in asthmatic Children	Calgary, Alberta	1-16 (M=7.2), 7 M 5 F	12
Ireland et al., 1996 ¹⁴¹	Prospective descriptive study	Cough Syncope in Arnold-Chiari I and II	Rochester, New York	7-46, M 2 F 7	9
Ishizuka et al., 2000 ¹⁴²	Case Report as Letter to Editor	Cough syncope in dysphagic patient	Sendai, Japan	75, M	1
Jenkins et al., 1981 ¹⁴³	Case Report	Cough syncope and extensive bilateral subconjunctival hemorrhages in a patient with adult whooping cough	London, United Kingdom	38, M	1
Katz, 1970 ¹⁴⁴	Case Series	Cough syncope in children with asthma	Los Angeles, California	1-14, UA	10

Kau et al., 2008 ¹⁴⁵	Case Report	Coughing during CT guided lung biopsy leading to air embolism and stroke	Klagenfurt, Austria	50, M	1
Kerr et al, 1961 ¹⁴⁶	Case Report	Cough syncope	Syracuse, New York	NA	18
Krediet et al., 2008 ¹⁴⁷	Case Report	Cough syncope	Amsterdam, The Netherlands	59 & 58, M	2
Kreitmann et al., 2011 ¹⁴⁸	Case Report	Cough syncope in patient with Visceral larva migrans with pulmonary involvement caused by <i>Toxocara canis</i> infection	Lens, France	7, M	1
Kusuyama et al., 2009 ¹⁴⁹	Case Report	Cough syncope and convulsions associated with sinus pause resolved with treatment for gastroesophageal reflux disease	Himeji, Japan	52, M	1
Lin et al., 2010 ¹⁵⁰	Case Report	Sudden paraplegia preceded by vigorous coughing resulting in release of myxoma fragment and embolism	Taipei, Taiwan	63, M	1
Lindegaard et al., 1977 ¹⁵¹	Case Series age matched controls	Cough syncope	Oslo, Norway	UA, M	5
Linzer et al., 1992 ¹⁵²	Case Report	Cough syncope in patient with occlusion and or stenosis of carotid, vertebral and subclavian arteries	Boston, Mass.	50, M	1
Mahawish, 2016 ¹⁵³	Case Report	Cough-induced hemiparesis resulting in spinal cord compression in patient with cervical spine abnormalities	Rotorua, New Zealand	67, F	1
Marinella, 2004 ¹⁵⁴	Case Report as Letter to Editor	Cough syncope and resulting car crash and orthopedic injuries in patient with influenza	Dayton, Ohio	45, M	1
Mattle et al., 1995 ¹⁵⁵	Case Series with controls	Cough syncope	Bern, Switzerland.	58, 57, 61, M	3

Maznyczka et al., 2010 ¹⁵⁶	Case Report	Cough syncope in patient with posterior cranial fossa lesion likely meningioma	Leicester, United Kingdom	54, M	1
McCorry et al., 2004 ¹⁵⁷	Case Series	Cough syncope in heavy goods vehicle drivers all resulting in serious traffic accidents and resulting in death of 2 drivers, serious injury in another driver and death in 2 pedestrians	Liverpool, United Kingdom	UA	4
McIntosh et al., 1956 ¹⁵⁸	Observational Study with Controls	Cough syncope	Durham, North Carolina	UA	20
Moncada et al., 1993 ¹⁵⁹	Case Report	Benign cough headache presenting as a toothache	Los Angeles, California	UA	1
Mereu et al., 2016 ¹⁶⁰	Clinical Study	Cough syncope with and without resulting injury (1 head injury and 1 traffic accident)	Cagliari, Italy;	49.4+14, 26 M 3 F	29
Nomura et al., 2004 ¹⁶¹	Case Report	Dissection of the vertebral artery, inducing Wallenberg's syndrome associated with persistent cough in patient with influenza	Takamatsu, Japan	45, M	1
Ozge et al., 2005 ¹⁶²	Cross-Sectional Study	Cough headache, other cough complications were encountered in 25 patients. These were urgency incontinence (9 patients, 5.5%), subconjunctival hemorrhage (7 patients, 4.2%), umbilical hernia (6 patients, 3.6%), cardiac rhythm disturbances (2 patients, 1.2%) and unexplained vomiting (1 patient, 0.6%)	Mersin, Turkey	45.3 ± 12, M (15/32%) F (17/53%)	32
O'doherty, 1953 ¹⁶³	Case Series	Tussive syncope and vertigo	Washington, D. C.	50, M 57, M 59, M 52, M 43, F	5
Oertel et al., 2005 ¹⁶⁴	Case Report	Tracheal injury with pneumomediastinum, pneumoretroperitoneum, cervical and thoracic subcutaneous emphysema, external pneumocephalus, and pneumorrhachis of the entire spinal canal from violent coughing	Aachen, Germany	19, M	1

Pascual et al., 2008 ¹⁶⁵	Prospective y clinical study	Cough headache	Salamanca, Spain	UA	68
Pascual et al., 1996 ¹⁶⁶	Retrospective chart review	Cough headache	Santander, Spain	UA	30
Pavao Martins et al., 2017 ¹⁶⁷	Case Report	Cough headache	Lisbon, Portugal	55, M 64, F	2
Perini et al., 1998 ¹⁶⁸	Case Report	Benign cough "cluster" headache.	Vicenza, Italy.	57, M	
Peters, 1961 ¹⁶⁹	Case Report	Tussive unconsciousness (tussive syncope was defined as never complete loss of consciousness, later definitions are different)	Sodus, New York	53, M	1
Puetz et al., 1995 ¹⁷⁰	Case Report	Cough syncope secondary to gastroesophageal reflux required to take a leave from crane operating job	Milwaukee, Wisconsin	32, M	1
Rao et al., 2006 ¹⁷¹	Retrospective Review and Interviews	Cough-induced hemiplegic migraine with Impaired consciousness in cystic fibrosis	Cleveland, Ohio	24, F 38, M	2
Salameh et al., 2011 ¹⁷²	Case Report	Spontaneous dissection of cerebral arteries followed by re-dissection in a patient with cough in patient with post-acute bronchitis	Leipzig, Germany	44, M	1
Sandford et al., 2015 ¹⁷³	Case Report	Left vertebral artery dissection with acute left cerebellar infarct in a patient with violent cough	Leicester, UK	59, M	1
Sansur et al., 2003 ¹⁷⁴	Before and after Clinical Trial	Cough headache in patients with Chiari I with and without syringomyelia	Bethesda, Maryland	UA	11
Siclari et al., 2009 ¹⁷⁵	Case Report	Bilateral carotid thrombus formation causing left hemispheric stroke after strenuous coughing due to mycoplasma pneumonia	Lausanne, Switzerland	40, F	1
Smith et al., 1993 ¹⁷⁶	Case Report	Cough headache as presenting symptom of cerebral aneurysm	San Francisco, California	UA, UA	1

Stern et al., 1988 ¹⁷⁷	Cross-sectional study	Cough headache	Cleveland, Ohio	UA	93 (50%)
Strauss et al., 1984 ¹⁷⁸	Case Report	Atypical cough syncope in patient with stenoses of both common carotids and patent vertebral arteries.	Medicine, Department of Surgery, Seattle, Washington	51, M	1
Styczynski et al., 2008 ¹⁷⁹	Case Report	Cough syncope in patient with internal jugular vein incompetence	Warsaw, Poland	53, M	1
Symonds, 1956 ¹⁸⁰	Case Series	Cough headache	London, United Kingdom	No organic disease n=21; X=55 (37-77), M 18 Organic disease. n=6 (50-63), F 6	27
Takazawa et al., 2014 ¹⁸¹	Case Report	Asymptomatic sinus arrest and post-hiccup cough syncope in a patient with medullary infarction	Otaku, Tokyo;	78, F	1
Tanaka et al., 1994 ¹⁸²	Case Report	Cough syncope with seizure	Fukuoka, Japan	55, M	1
Torrington et al., 1984 ¹⁸³	Case Report as a letter	Acute cervical radiculopathy and disc herniation following violent coughing	Boise, Idaho	44, F	1
Tsai et al., 2014 ¹⁸⁴	Case Report	Cough-induced hemispheric transient ischemic attack in patient with occlusion of the left common and internal carotid arteries and an incomplete circle of Willis	Dallas, Texas	65, M	1
Tsuji et al., 1989 ¹⁸⁵	Case Report	Spinal epidural emphysema following violent cough	Toyama, Japan	15, M	1
Ulyatt et al., 1991 ¹⁸⁶	Case Report	Cerebral air embolism associated with coughing resulting in likely tension pneumothorax, pneumopericardium, pneumomediastinum and air in fascial planes of the neck, in a trauma victim on a continuous positive airway pressure	Auckland, New Zealand	22, UA	1

Vincent et al., 1988 ¹⁸⁷	Case Report	Cough- induced syncope resulting in death in the setting of cor pulmonale and obstructive lung disease	Brussels, Belgium	61, M	1
Viticchi et al., 2013 ¹⁸⁸	Case Report	Coughing attack associated with carotid artery dissection and stroke in a patient with pertussis	Rome, Italy	57, M	1
Waldmann et al., 2017 ¹⁸⁹	Case Report	Cough syncope related to gastroesophageal reflux	Paris, France	42, M	1
Williams, 1980 ¹⁹⁰	Case Report	Cough headache due to cerebellar tonsil herniation	Smethwick, Warley, England	27, F 31, F	2
Wolman, 1962 ¹⁹¹	Case Report	Anoxic cerebral damage following severe paroxysms of cough associated with pertussis	Sheffield, United Kingdom	9, F	1
Yagi et al., 2009 ¹⁹²	Case Report	Cough-induced nystagmus	Bunkyo-ku, Japan	59, F	1
Zeng et al., 2013 ¹⁹³	Case Report	Cough syncope associated with constrictive pericarditis	Chongqing, China	87, M	1
OPHTHALMOLOGIC					
Castelnuovo et al., 2000 ¹⁹⁴	Case Report	Spontaneous compressive orbital emphysema (air in the orbit compressing the eyeball and the optic nerve) after a violent attack of coughing in patient found to have sphenoid bone dysplasia with dehiscence and a flap of mucosa covering one dehiscence allowing air to enter but not leave the orbit.	Pavia, Italy	15, M	1
Fajgenbaum et al., 2018 ¹⁹⁵	Case Report	Large bullous, predominantly inferior, serous retinal detachment acutely developed after a severe coughing fit in an eye with morning glory disc anomaly	London, United Kingdom	42, M	1
Kashani et al., 2009 ¹⁹⁶	Case Report	Valsalva retinopathy presenting with subhyaloid hemorrhage likely due to coughing in patient with hypertension and probable URI.	London, United Kingdom	46, M	1
Kwong et al., 2006 ¹⁹⁷	Case Report	Transient cough-induced blindness in patient with temporal arteritis	Edmonton, Canada	71, M	1

Marimuthu et al., 2017 ¹⁹⁸	Case Report as Letter to Editor	Subconjunctival hemorrhage following a bout of coughing in child with suspected congenital fibrinogen deficiency	Puducherry, India	5, F	1
Marous et al., 2018 ¹⁹⁹	Case Report	Coughing-induced suprachoroidal hemorrhage simulating melanoma	Great River, New York	54, F 68, F	2
Reid et al., 2013 ²⁰⁰	Case Report	Bilateral periorbital ecchymosis (panda sign) following an exacerbation of asthma with severe coughing	Elgin, United Kingdom	19, F	1
Rieger, 1996 ²⁰¹	Case Report	Complete spontaneous "spectacle hematoma" after vigorous paroxysmal coughing	Bad Hall, Austria.	UA, UA	1
Shaikh et al., 2003 ²⁰²	Case Report	Spontaneous late postoperative trabeculectomy bleb leak after a severe bout of coughing in patients with multiple medical problems	Buckinghamshire, United Kingdom	73, M 82, M	2
Romano, 1983 ²⁰³	Case Report as Letter to Editor	Cough during intraocular surgery causing loss of the eye	Gainesville, Florida	UA, UA	2
PSYCHOSOCIAL/QUALITY OF LIFE					
Braido et al, 2006 ²⁰⁴	Observational study	<p>Chronic cough patients reported significantly lower scores in 5 of 8 SF-36 domains: social functioning ($t=10.292$), physical role limitation ($t=9.667$), emotional role limitation ($t=7.712$), general health ($t=5.154$) and vitality ($t=4.426$).</p> <p>The greatest disabilities identified by the CCIQ were observed in the social relationship (58.33) domain, followed by sleep/concentration (54.26), mood (51.49) and daily activities (47.69). Sleep, disturbing the partner, and irritability were the three outstanding aspects, affecting 80% of patients. These results show that chronic cough has a high negative impact on HRQL</p>	Genoa, Italy	X=53.7 ± 11.7 (SD) years (range 23-86 years), Sex unclear	95

Deslee et al., 2016 ²⁰⁵	Multicenter Cross-Sectional Study	Cough, assessed by the dedicated CASA-Q questionnaire in the 7 previous days, is independently associated with HRQoL impairment in COPD.	Reims, France	62 [56–69], M 128, F 50	178
French et al., 2017 ²⁰⁶	Prospective Observational Longitudinal Study	With treatment for the causes of chronic cough, adverse cough psychosocial and physical quality of life impact, including urinary incontinence, and psychological symptoms could all be simultaneously improved as measured by CQLQ.	Worcester, MA	X= 58.5 ± 11.1 (SD), M 25, F 55	80
French et al., 1998 ²⁰⁷	Prospective Intervention Trial	With successful treatment of chronic cough, the average (± SD) number of complaints decreased from 8.6 ± 4.8 to 1.9 ± 3.2 (P<.0001). Post treatment, 16 of the 29 adverse occurrences had significantly decreased as measured by ACOS. Associated with the decreases in adverse cough occurrences was a significant decrease in the patients' self-perceived health related dysfunction	Worcester, MA	X= 54±12 (SD), M 7, F 32	39
Gaspole et al., 2017 ²⁰⁸	Longitudinal Study	Multivariate analysis revealed that breathlessness and cough, along with the severity of depression, were the only independent predictors of quality of life. Of those, dyspnea was the major predictor, accounting for nearly 71% of the variation within the model of total SGRQ score. Cough severity accounted for a further 5.7% of variation, while depression accounted for 3.5% of variation. Supports all 3 as targets for improving quality of life.	Melbourne, Australia	X=71.3±8.6 (SD), M 347, F 169	516
Hrisanfow et al., 2013 ²⁰⁹	Questionnaire survey	The present results, using the CCQ and the SF-12 questionnaires indicate that cough and urinary incontinence (cause undetermined) lead to poor quality of life (physical and mental) in women and men with chronic obstructive pulmonary disease. Women with incontinence had a significantly higher burden of cough quality of life symptoms, functional and mental state than did women without incontinence.	Orebro, Sweden	50-75, M 337, F 391	728

Newcombe et al., 2016 ²¹⁰	Before and after survey	16 highest impact of chronic cough physical, psychological and social scores from the CC-QoL include: 1. You hate your cough; 2. Coughing annoys you in past week 3; Your cough makes you feel frustrated 4; Your cough disturbs others; 5. You are annoyed by your cough doing activities; 6. Your chest or stomach pains bother you 7. Your cough makes you feel tired; 8. You are troubled sleeping at night because of cough 9; Your cough wakes you during night 10; You have trouble getting to sleep because of cough 11; Coughing up phlegm annoys you; 12. You find it difficult to do things because of cough 13; You feel uncomfortable because of cough; 14. Your chest feels bad; 15. Your cough annoys others; 16. You feel frustrated because you couldn't keep up with others. Findings using various questionnaires indicate that chronic cough significantly impacts the quality of life of children.	Brisbane, Australia	Median 10 years, IQR 8 – 12 years; M 65, F 65	130
Petsios et al., 2009 ²¹¹	Observational Study	Cough has a direct effect on asthmatic children's QoL. Cough appeared to affect QoL of 8-14 year olds more than other symptoms, especially in girls. In the 8-14 year age group, coughers reported lower QoL compared to their counterparts; moreover, cough was found to affect QoL more than other symptoms ($p < 0.05$ in all domains).	Athens, Greece	4-14, UA	200
Shirai et al., 2012 ²¹²	Cross-Sectional Study	GERD scales were negatively correlated with cough quality of life total scores (LCQ) ($r = -0.43$), $P < .0001$. In patients with controlled asthma, patients with GERD had a significantly impaired quality of life because of the cough that affected all health domains.	Hamamatsu, Japan	50 (17-78), M 8, F 14	22
Tashkin et al., 2017 ²¹³	Randomized Controlled Trial	Cough-specific QoL was modestly impaired in patients with frequent cough (total LCQ score, 15.4 ± 3.7	Los Angeles, California	52.9 ± 9.23 (SD),	87

		(SD); normal range, 3-21 [higher scores indicate worse QoL]). Frequent cough occurs commonly in scleroderma-related interstitial lung disease, correlates with both the presence and severity of GERD and ILD at baseline, and declines in parallel with improvements in both ILD and GERD over a 2-year course of therapy.		Sex UA	
RESPIRATORY					
Alves et al. 2012 ²¹⁴	Case report	Cough as the trigger for pneumomediastinum, pneumothorax, pneumorrhachis and subcutaneous emphysema.	Santa Maria, Brazil	21, F	1
Asenjo et al., 2015 ²¹⁵	Case report	Lung herniation through the left lower intercostal space laterally coughing in patient with COPD treated with CPAP	Madrid, Spain	60, M	1
Benedict, 1961 ²¹⁶	Case Report	Rupture of the bronchus associated with paroxysms of coughing during bronchoscopy	Boston, MA	62, F, 74, M	2
Bilir et al, 2014 ²¹⁷	Case report	Pneumomediastinum, pneumopericardium and epidural pneumatosis following coughing spells in patient with asthma	Rize, Turkey	9, M	1
Bundy et al, 1994 ²¹⁸	Case report	Hydrothorax (large right pleural effusion) in a patient coughing while undergoing active peritoneal dialysis for renal failure	Portsmouth, Virginia	36, M	1
Candas et al. 2015 ²¹⁹	Case report	Development of bilateral chylothorax after simple cough	Istanbul, Turkey	65, F	1
Chiba et al. 1995 ²²⁰	Case report	Subcutaneous emphysema extending from the skull base and face to the chest, mediastinum and spinal epidural space following severe coughing caused by acute bronchitis.	Tokyo, japan	28, M	1
Cho et al., 2018 ²²¹	Case Report	Anteromedial arytenoid subluxation due to severe cough when eating peanuts	Minneapolis, Minnesota	35, M	1
Chua et al., 2015 ²²²	Case report	Left-sided lung herniation through the 8 th intercostal space, with pulmonary and pleural contents	Gold Coast, Queensland, Australia	60, M	1

		extending through the hernia into the left posterolateral chest wall associated with non-resolving cough			
Franco et al., 2019 ²²³	Case report	Subcutaneous emphysema in neck and chest, left pneumothorax, and pneumomediastinum associated with a violent coughing in a patient with asthma	Torrejon de Ardoz, Spain	67, F	1
Hamid et al., 2018 ²²⁴	Case Report	Spontaneous posterolateral lung herniation between 7 th and 8 th rib, complicated by pneumothorax, severe subcutaneous emphysema, pneumomediastinum, and pneumopericardium associated with severe cough in a patient with COPD and steroid use	Abington, Pennsylvania	65, M	1
Irwin et al., 2006 ²²⁵	Prospective cross sectional controlled.	Compared to control subjects, there was minimal-to-moderate chronic inflammation in all coughers ($p \leq 0.0004$) on bronchial biopsy	Worcester, MA	X= 51.6 ±11.9 SD M 11 F 10	24
Irwin et al., 1977 ²²⁶	Review	Complications reported up to 1977: asymptomatic elevation of serum creatine phosphokinase to rupture of rectus abdominis muscles, rib fractures, pneumomediastinum, Pneumothorax, pulmonary emphysema, loss of consciousness, rupture of subconjunctival, nasal, and anal veins, bradycardia, second and third degree heart block, cough syncope, constitutional symptoms (insomnia, exhaustion, anorexia, vomiting, fever, headache), urinary incontinence, disruption of surgical wounds, irritation of normal laryngeal and tracheobronchial structures	Providence, RI	UA, UA	UA
Kao et al., 2014 ²²⁷	Case report	Transdiaphragmatic intercostal hernia, small intestine inside the left chest cavity and a diaphragmatic defect in the left anterior diaphragm caused by violent coughing	Taichung City, Taiwan	73, M	1

Kara et al., 2004 ²²⁸	Case Report	Left diaphragmatic rupture with gastric fundus in left hemithorax and mediastinal shift complicated with lacerations of stomach and spleen caused by a violent cough in patient with pneumonia and COPD	Manisa, Turkey	28, M	1
Khayer, 2014 ²²⁹	Case Report	Simple cough as a cause of subcutaneous and mediastinal emphysema in child with a URI	Dubai, United Arab Emirates	3, F	1
Mao et al., 2007 ²³⁰	Case Report	Herniation of the right apical lung (cervical lung) with tracheal displacement to the left in a child with cough	Oakland, California	10, F	1
Park et al., 2016 ²³¹	Retrospective review	Cough as the most frequent factor for trigger for spontaneous pneumomediastinum	Suwon, Korea	X= 22.7±13.2, M 67 (73.6%)	14
Patolia et al., 2012 ²³²	Case Report	Bilateral pneumothorax associated with coughing during bronchoscopy without biopsy	Brooklyn, New York	51, F	1
Roe et al., 1967 ²³³	Case Series	Pneumomediastinum in children with cough with a death reported	Jinja, Uganda	6 mos, M 1, M 4, M 18 mos, M 9, M	5
Rousie et al., 2004 ²³⁴	Case Report	Large laceration of the posterior tracheal wall with subcutaneous emphysema and huge pneumomediastinum and minor right pneumothorax after coughing while in recovery room post cataract surgery in a patient with extensive steroid use	Liège, Belgium	67, F	1
Rivara et al., 2008 ²³⁵	Case Report	Fatal gas cerebral embolism after heavy coughing while using non-invasive ventilation (bilevel positive airway pressure) for fibrotic lung disease	Geneva, Switzerland,	78, M	1
Roh et al., 2006 ²³⁶	Case Report	Spontaneous longitudinal laceration of the posterior membranous cervical trachea associated with subcutaneous emphysema in the right lateral neck, retropharyngeal, and paraesophageal spaces, and upper mediastinum in a child with severe	Seoul, Korea	7, M	1

		cough due to acute tracheobronchitis			
Rydell et al., 1955 ²³⁷	Case Series	Pneumomediastinum secondary to coughing in an elderly patient with emphysema with death due to complications	Santa Barbara, CA	96, M	1
Sayhan et al., 2008 ²³⁸	Case Report	Spontaneous pneumomediastinum following a paroxysm of cough due to a URI	Diyarbakir, Turkey	21, F	1
Sheka et al., 1984 ²³⁹	Case Report	Anterolateral defect in the right 8 th interspace with lung herniation on expiration and fracture of the right eighth rib, and a pleural effusion after vigorous coughing	Brooklyn, New York	Retired, M	1
Sloth-Nielsen et al., 1989 ²⁴⁰	Case Report	Spontaneous intercostal pulmonary hernia between ribs 7 and 8 with subsegmental incarceration associated with vigorous coughing	Aarhus, Denmark	70, M	1
Sulaiman et al., 2006 ²⁴¹	Case Report	Anterior fracture of the 9 th rib close to the costal margin, enlarged 8 th intercostal space, and herniation of the pulmonary parenchyma outside of the bony structure in an obese male with chronic bronchitis	Bron Cedex, France	57, M	1
Tack et al., 2000 ²⁴²	Case Report	Intercostal muscle rupture with subcutaneous hematoma and lung herniation after a single cough	Charleroi, Belgium	62, M	1
Wang et al., 2010 ²⁴³	Case Report	Bilateral spontaneous pneumothorax, pneumomediastinum, and pneumopericardium and subcutaneous emphysema of the neck induced by coughing after exposure to concrete silicon dust	Lebanon, New Hampshire	26, M	1
Young et al., 1991 ²⁴⁴	Cross sectional questionnaire interview	Cough perceived by patients as making asthma worse. Coughing exacerbated asthma in 78 patients (41.7%) whereas in 56 (29.9%) it brought relief. However, in 35 patients (18.7%) it had a divalent effect as sometimes	Edinburgh, United Kingdom	UD	187

		it made their asthma worse and sometimes it made it better.			
DISEASE TRANSMISSION					
Field et al., 2018 ²⁴⁵	CHEST Guideline and Expert Panel Report	"According to the World Health Organization (WHO), cough lasting ≥ 2 weeks warrants investigation in resource-limited countries where the prevalence of TB is high, defined as ≥ 100 in 100,000, because of the risks associated with delayed diagnosis to infected individuals and the risk of continued transmission to their contacts"	Calgary, Alberta, Canada		
Lindsley et al., 2012 ²⁴⁶	Clinical Study	When the subjects had influenza, an average of 63% of each subject's cough aerosol particle volume in the detection range was in the respirable size fraction (SD 22%), indicating that these particles could reach the alveolar region of the lungs if inhaled by another person. This enhancement in aerosol generation during illness may play an important role in influenza transmission	Morgantown, West Virginia	18-22, M6 F3	9
LABORATORY TESTING					
Wang et al., 2017 ²⁴⁷	Case Report	Increased 18F-FDG uptake in multiple muscles likely related to violent cough the night prior to PET/CT study in patient with lung cancer (false positive)	Luzhou, Sichuan, China	69, F	1

Abbreviations: UA = unavailable; M=male; F=female; mos = months; URI = upper respiratory infection; AV – atrioventricular block; CAD = coronary artery disease; LVAD = left ventricular assist device; ICU = intensive care unit; LAD = left anterior descending; NOAC = novel oral anticoagulant; ACE = angiotensin converting enzyme; BMI = body mass index; DOAC = direct oral anticoagulant; ASA = aspirin; HRQoL = health-related quality of life; IQR = interquartile range; QoL = quality of life; GERD = gastroesophageal reflux disease; ILD = interstitial lung disease; SF-12 = 12 item short form questionnaire; SF-36 = 36 item short form questionnaire; SGRQ = Saint George’s Respiratory Questionnaire; ACOS = adverse cough outcome survey; CASA-Q = Cough and Sputum Assessment Questionnaire; CCIQ = Chronic Cough Impact Questionnaire; CCQ = Clinical COPD Questionnaire; CC-QoL= Chronic Cough-Specific QoL Questionnaire, CQLQ = Cough Quality of Life Questionnaire; LCQ = Leicester Cough Questionnaire; CPAP = continuous positive airway pressure; WHO = World Health Organization; SD = standard deviation; 18F-FDG = 18 F-fludeoxyglucose; PET = positron emission tomography; CT = computed tomography; F = female; M = male.

REFERENCES:

1. Ahn KS, Yoo K, Cha IH, et al. Spontaneously migrated tip of an implantable port catheter into the axillary vein in a patient with severe cough and the subsequent intervention to reposition it. *Korean J Radiol.* 2008;9 Suppl:S81-84.
2. Aliyev F, Kilickesmez KO, Celiker C, et al. Cough-induced sinus arrest resulting in recurrent episodes of syncope: Is it really transient? *J Cardiovasc Med (Hagerstown).* 2012;13(7):468-470.
3. Baron SB, Huang SK. Cough syncope presenting as mobitz type ii atrioventricular block--an electrophysiologic correlation. *Pacing Clin Electrophysiol.* 1987;10(1 Pt 1):65-69.
4. Bartel T, Bonatti JO, Muller S. Device dislocation, probably due to paroxysmal coughing early after percutaneous closure of secundum type atrial septal defect. *Am J Cardiol.* 2008;101(4):548-549.
5. Butman SM. Coughing-induced stress cardiomyopathy. *Catheter Cardiovasc Interv.* 2010;76(3):388-390.
6. Ceponis PJ, Fox W, Taylor TD, et al. Non-dysbaric arterial gas embolism associated with chronic necrotizing pneumonia, bullae and coughing: A case report. *Undersea Hyperb Med.* 2017;44(1):73-77.
7. Choi YS, Kim JJ, Oh BH, et al. Cough syncope caused by sinus arrest in a patient with sick sinus syndrome. *Pacing Clin Electrophysiol.* 1989;12(6):883-886.
8. Cogbill TH, Keimowitz RM. Injection port silastic catheter dislodgement caused by tussive (cough) paroxysm. *Wis Med J.* 1987;86(11):21-22.
9. Dubey P, Prasad RR. Expulsion of a peripherally placed "central" line by coughing. *Anaesthesia.* 2005;60(2):208-209.
10. Hart G, Oldershaw PJ, Cull RE, et al. Syncope caused by cough-induced complete atrioventricular block. *Pacing Clin Electrophysiol.* 1982;5(4):564-566.
11. Herr RD, Call G, Banks D. Vertebral artery dissection from neck flexion during paroxysmal coughing. *Ann Emerg Med.* 1992;21(1):88-91.
12. Irani F, Sanchis J. Inspiration- and cough-induced atrioventricular block. *Can Med Assoc J.* 1971;105(7):735-736.
13. Ishii K, Koga Y, Araki K. Idiopathic pneumopericardium induced by forced coughing during coronary arteriography. *Jpn Circ J.* 1987;51(2):157-159.
14. Jacobs WR, Zaroukian MH. Coughing and central venous catheter dislodgement. *JPEN J Parenter Enteral Nutr.* 1991;15(4):491-493.
15. Lee D, Beldner S, Pollaro F, et al. Cough-induced heart block. *Pacing Clin Electrophysiol.* 1999;22(8):1270-1271.
16. Littmann L, Miller RF, Humphrey SS. "Cough drops". *J Cardiovasc Electrophysiol.* 2002;13(2):198.
17. Maury JM, Pasquer A, Koffel C, et al. Cardiac luxation in icu after coughing effort following right pneumonectomy. *Intensive Care Med.* 2016;42(6):1071-1072.
18. McIntyre WF, Green MS. Electrocardiographical clues to a mechanism of pre-syncope. *Cardiol J.* 2009;16(5):479-480.
19. Omori I, Yamada C, Inoue D, et al. Tachyarrhythmia provoked by coughing and other stimuli. *Chest.* 1984;86(5):797-799.
20. Papadimos TJ, Hofmann JP. Aortic dissection after forceful coughing. *Anaesthesia.* 2006;61(1):71-72.
21. Reisin L, Blaer Y, Jafari J, et al. Cough-induced nonsustained ventricular tachycardia. *Chest.* 1994;105(5):1583-1584.
22. Ruckdeschel ES, Wolfel E, Nguyen DT. A case of cough-induced ventricular tachycardia in a patient with a left ventricular assist device. *Card Electrophysiol Clin.* 2016;8(1):165-167.
23. Sivam S, Yozghatlian V, Dentice R, et al. Spontaneous coronary artery dissection associated with coughing. *J Cyst Fibros.* 2014;13(2):235-237.
24. Wu PY, Yeh YC, Huang CH, et al. Spontaneous migration of a port-a-cath catheter into ipsilateral jugular vein in two patients with severe cough. *Ann Vasc Surg.* 2005;19(5):734-736.
25. Yirerong JA, Hurlburt H. Spontaneous coronary artery dissection in a man with intense coughing spasms. *BMJ Case Rep.* 2018;2018.

26. Kravitz P. The clinical picture of "cough purpura," benign and non-thrombocytopenic eruption. *Va Med.* 1979;106(5):373-374.
27. Ramneesh G, Sheerin S, Surinder S, et al. A prospective study of predictors for post laparotomy abdominal wound dehiscence. *J Clin Diagn Res.* 2014;8(1):80-83.
28. Santarpino G, Pfeiffer S, Concistre G, et al. Sternal wound dehiscence from intense coughing in a cardiac surgery patient: Could it be prevented? *G Chir.* 2013;34(4):112-111.
29. Tseng CK, Tseng YC, Chen WK, et al. A rare complication of cough. *Intern Med.* 2007;46(15):1269-1270.
30. Fenig M, Strasberg S, Cohen JC, et al. Laryngeal fracture after coughing. *Am J Emerg Med.* 2013;31(9):1421 e1421-1423.
31. Nerurkar N, Chhapola S. Arytenoid subluxation after a bout of coughing: A rare case. *Am J Otolaryngol.* 2012;33(2):275-278.
32. Annunziata GM, Gunasekaran TS, Berman JH, et al. Cough-induced mallory-weiss tear in a child. *Clin Pediatr (Phila).* 1996;35(8):417-419.
33. Lee CH, Lan CC, Wang CC, et al. Spontaneous rupture of gastroduodenal artery pseudoaneurysm following vigorous cough. *Am J Gastroenterol.* 2009;104(2):529-530.
34. Nensa F, Stylianou E, Schroeder T. Progressive dyspnea after a heavy coughing attack. *Gastroenterology.* 2013;144(3):e9-e10.
35. Park Y, Chung M, Lee MA. Traumatic lumbar hernia: Clinical features and management. *Ann Surg Treat Res.* 2018;95(6):340-344.
36. Sanjay P, Woodward A. Single strenuous event: Does it predispose to inguinal herniation? *Hernia.* 2007;11(6):493-496.
37. Sanyal A, Jefferson PA, Kirby DF. Percutaneous endoscopic gastrostomy button malfunction with severe cough. *Gastrointest Endosc.* 1989;35(2):118-119.
38. Sengar M, Neogi S, Mohta A. Prolapse of the rectum associated with spontaneous rupture of the distal colon and evisceration of the small intestine through the anus in an infant. *J Pediatr Surg.* 2008;43(12):2291-2292.
39. Shutsha E, Brenard R. Hepatic cyst rupture after a coughing fit. *J Hepatol.* 2003;38(6):870.
40. Stillman K, Kellar J. Rectus sheath hematoma: An unfortunate consequence of novel anticoagulants. *West J Emerg Med.* 2015;16(3):420-421.
41. Stupnik T, Vidmar S, Hari P. Spontaneous rupture of a normal spleen following bronchoplastic left lung lower lobectomy. *Interact Cardiovasc Thorac Surg.* 2008;7(2):290-291.
42. Toubia NT, Tawk MM, Potts RM, et al. Cough and spontaneous rupture of a normal spleen. *Chest.* 2005;128(3):1884-1886.
43. Ulla JL, Almohalla C, Ledo L, et al. Coughing attacks as a cause of gastric hemorrhage in patients who have undergone percutaneous endoscopic gastrostomy: An endoscopic solution. *Endoscopy.* 2001;33(9):821.
44. Vasquez JC, Halasz NA, Chu P. Traumatic abdominal wall hernia caused by persistent cough. *South Med J.* 1999;92(9):907-908.
45. Wehbe E, Raffi S, Osborne D. Spontaneous splenic rupture precipitated by cough: A case report and a review of the literature. *Scand J Gastroenterol.* 2008;43(5):634-637.
46. Wergowske GL, Carmody TJ. Splenic rupture from coughing. *Arch Surg.* 1983;118(10):1227.
47. Won AC, Ethell A. Spontaneous splenic rupture resulted from infectious mononucleosis. *Int J Surg Case Rep.* 2012;3(3):97-99.
48. Wurm Johansson G, Nemeth A, Nielsen J, et al. Gastric rupture as a rare complication in diagnostic upper gastrointestinal endoscopy. *Endoscopy.* 2013;45 Suppl 2 UCTN:E391.
49. Weaver DH, Maxwell JG, Castleton KB. Mallory-weiss syndrome. *Am J Surg.* 1969;118(6):887-892.
50. Ben Safta Y, Ghalleb M, Baccari A, et al. Vaginal cuff dehiscence and evisceration 11 years after a radical hysterectomy: A case report. *Int J Surg Case Rep.* 2017;41:234-237.
51. Lee YJ, Chiang YF, Tsai JC. Severe nonproductive cough and cough-induced stress urinary incontinence in diabetic postmenopausal women treated with ace inhibitor. *Diabetes Care.* 2000;23(3):427-428.

52. Reichman G, De Boe V, Braeckman J, et al. Urinary incontinence in patients with cystic fibrosis. *Scand J Urol*. 2016;50(2):128-131.
53. Swenson CW, Kolenic GE, Trowbridge ER, et al. Obesity and stress urinary incontinence in women: Compromised continence mechanism or excess bladder pressure during cough? *Int Urogynecol J*. 2017;28(9):1377-1385.
54. Abu-Gazala M, Ratnayake A, Abu-Gazala S, et al. An enigma of spontaneous combined transdiaphragmatic, intercostal and abdominal wall hernia. *Hernia*. 2013;17(3):415-418.
55. Altman AM, Akers D. Rectus sheath hematoma secondary to a tussive paroxysm. *J La State Med Soc*. 2007;159(5):250-251.
56. Anderton RL. Rectus abdominal muscles pulled by coughing. *JAMA*. 1972;222(4):486.
57. Ayers DE, LeFeuvre A, Barker P. Surgical repair of intercostal pulmonary hernia secondary to cough induced rib fracture. *J R Nav Med Serv*. 2002;88(2):55-56.
58. Bayram B, Oray NC, Acara CA. Old man with groin bruising. *West J Emerg Med*. 2014;15(7):872-873.
59. Begley A, Wilson DS, Shaw J. Cough fracture of the first rib. *Injury*. 1995;26(8):565-566.
60. Bodenheimer JM. Fractured ribs from coughing. *New Orleans Med Surg J*. 1948;100(10):474.
61. Butensky AM, Gruss LP, Gleit ZL. Flank pseudohernia following posterior rib fracture: A case report. *J Med Case Rep*. 2016;10(1):273.
62. Chaar CI, Attanasio P, Detterbeck F. Disruption of the costal margin with transdiaphragmatic abdominal herniation induced by coughing. *Am Surg*. 2008;74(4):350-353.
63. Cherian SV, Ocazonez D, Estrada YMRM. Spontaneous lung hernia secondary to persistent cough: A rare entity. *Arch Bronconeumol*. 2018;54(2):101.
64. Cosgun IG, Unal Y, Cetin M. Rectus sheath hematoma due to cough in an elderly patient under antiplatelet therapy. *Clin Respir J*. 2015;9(2):247-249.
65. Daniel R, Naidu B, Khalil-Marzouk J. Cough-induced rib fracture and diaphragmatic rupture resulting in simultaneous abdominal visceral herniation into the left hemithorax and subcutaneously. *Eur J Cardiothorac Surg*. 2008;34(4):914-915.
66. De Luca G, Martucci N, La Rocca A, et al. Lung herniation: An unusual cause. *European Journal of Cardio-thoracic Surgery*. 2015;48(4):634-635.
67. De Maeseneer M, De Mey J, Debaere C, et al. Rib fractures induced by coughing: An unusual cause of acute chest pain. *Am J Emerg Med*. 2000;18(2):194-197.
68. Dean NC, Van Boerum DH, Liou TG. Rib plating of acute and sub-acute non-union rib fractures in an adult with cystic fibrosis: A case report. *BMC Res Notes*. 2014;7:681.
69. Dearlove OR, Bowen J. Air emphysema in the neck after excision of a thyroglossal cyst. *Anaesthesia*. 2004;59(2):193-194.
70. Elango K, Murthi S, Devasahayam J, et al. Spontaneous rectus sheath haematoma due to cough on apixaban. *BMJ Case Rep*. 2018;2018.
71. Fein BT. Repeated multiple fractures of ribs by cough in bronchial asthma. *J Allergy*. 1958;29(3):209-213.
72. Franco M, Albano L, Blaimont A, et al. Spontaneous fracture of the lower angle of scapula. Possible role of cough. *Joint Bone Spine*. 2004;71(6):580-582.
73. George L, Rehman SU, Khan FA. Diaphragmatic rupture: A complication of violent cough. *Chest*. 2000;117(4):1200-1201.
74. Gradwohl JR, Mailliard JA. Cough induced avulsion of the lesser trochanter. *Nebr Med J*. 1987;72(8):280-281.
75. Habib A, Elsayed H, Dhanji AR, et al. Spontaneous combined lung and bowel hernia following an episode of acute bronchitis. *Interact Cardiovasc Thorac Surg*. 2010;10(6):1042-1043.
76. Han YM, Yoo JH, Suh JS. Sonographic appearance of a tear of the lateral internal oblique muscle resulting from cough. *J Clin Ultrasound*. 2005;33(9):471-473.
77. Heckman AJ, Mohseni M, Villanueva A, et al. Concurrent spontaneous pneumomediastinum and pneumorrhachis. *J Emerg Med*. 2018;54(6):e117-e120.

78. Hillenbrand A, Henne-Bruns D, Wurl P. Cough induced rib fracture, rupture of the diaphragm and abdominal herniation. *World J Emerg Surg.* 2006;1:34.
79. Hillman KM. Severe coughing and pneumoperitoneum. *Br Med J (Clin Res Ed).* 1982;285(6348):1085.
80. Hjalmarsson S, Asmundsson T, Sigurdsson J, et al. Major hemorrhage as a complication of cough fracture. *Chest.* 1993;104(4):1310.
81. Jabr FI, Skeik N. Spontaneous lateral abdominal wall hematoma complicating chronic obstructive pulmonary disease exacerbation. *J Med Liban.* 2011;59(3):160-161.
82. Jang JY, Lim YS, Woo JH, et al. Spontaneous rupture of intercostal artery after severe cough. *Am J Emerg Med.* 2015;33(1):131 e131-133.
83. Kallay N, Crim L, Dunagan DP, et al. Massive left diaphragmatic separation and rupture due to coughing during an asthma exacerbation. *South Med J.* 2000;93(7):729-731.
84. Karabulut Z, Dogan P. Conservative management of spontaneous retroperitoneal bleeding after severe coughing. *Turk J Gastroenterol.* 2014;25(6):733-734.
85. Katrancioglu O, Akkas Y, Arslan S, et al. Spontaneous rib fractures. *Asian Cardiovasc Thorac Ann.* 2015;23(6):701-703.
86. Kawahara H, Baba H, Wada M, et al. Multiple rib fractures associated with severe coughing--a case report. *Int Orthop.* 1997;21(4):279-281.
87. Khan AS, Bakhshi GD, Khan AA, et al. Transdiaphragmatic intercostal hernia due to chronic cough. *Indian J Gastroenterol.* 2006;25(2):92-93.
88. Kodama K, Takase Y, Yamamoto H, et al. Cough-induced internal oblique hematoma. *J Emerg Trauma Shock.* 2013;6(2):132-134.
89. Kopcsanyi I, Laczay A, Nagy L. Cough fracture of ribs in infants with dyspnoea. *Acta Paediatr Acad Sci Hung.* 1969;10(2):93-98.
90. Kosalka J, Wawrzycka-Adamczyk K, Jurkiewicz P, et al. Cough-induced lung intercostal hernia. *Pneumonol Alergol Pol.* 2016;84(2):119-120.
91. Kuczkowski KM, Benumof JL. Postoperative cough-induced recurrence of spinal anaesthesia in the parturient. *Anaesthesia.* 2003;58(1):101.
92. Laitinen H, Kivikanervo K, Vareniskanen M. Coughing osteophytes of the ribs. *Ann Med Intern Fenn.* 1954;43(4):293-297.
93. Litch JA, Tuggy M. Cough induced stress fracture and arthropathy of the ribs at extreme altitude. *Int J Sports Med.* 1998;19(3):220-222.
94. Long AE. Stress fracture of the ribs associated with pregnancy. *Surg Clin North Am.* 1962;42:909-919.
95. Lorin MI, Slovis TL, Haller JO. Fracture of ribs in psychogenic cough. *N Y State J Med.* 1978;78(13):2078-2079.
96. Ma HR, Yang YH, Chiang BL. Clinical observation between chronic sustained cough with asthma and childhood inguinal hernia. *J Microbiol Immunol Infect.* 2003;36(4):275-277.
97. Macedo AC, Kay FU, Terra RM, et al. Transdiaphragmatic intercostal hernia: Imaging aspects in three cases. *J Bras Pneumol.* 2013;39(4):513-517.
98. Macias-Robles MD, Peliz MG, Gonzalez-Ordóñez AJ. Prophylaxis with enoxaparin can produce a giant abdominal wall haematoma when associated with low doses of aspirin among elderly patients suffering cough attacks. *Blood Coagul Fibrinolysis.* 2005;16(3):217-219.
99. Nakanishi H, Iwasaki S, Ohkawa Y, et al. Diaphragmatic rupture due to violent cough during tracheostomy. *Auris Nasus Larynx.* 2010;37(1):121-124.
100. Maqsood U, Ganaie MB, Hasan MI, et al. Unusual case of bilateral haemotympanum after endobronchial ultrasound-guided transbronchial fine needle aspiration (ebus-tbna). *BMJ Case Rep.* 2018;2018.
101. Mary Parks R, Jadoon M, Duffy J. Nontraumatic rupture of the costal margin: A single-center experience. *Asian Cardiovasc Thorac Ann.* 2019;27(2):105-109.
102. Migeot M, Kessler R, Etxeberría Izal A, et al. Pneumorrhachis associated with a spontaneous pneumomediastinum. *Rev Neurol (Paris).* 2013;169(2):173-174.

103. Musher DM, Keitel WA. Severe paroxysmal coughing and pleuritic pain in an adult. *Hosp Pract (1995)*. 1995;30(12):65-67.
104. Nelwan EJ, Angelina F, Adiwinata R, et al. Spontaneous rectus sheath hematomas in dengue hemorrhagic fever: A case report. *IDCases*. 2017;10:35-37.
105. Oostendorp SEV, Buijsman R, Zuidema WP. Cough-induced nonunion rib fractures and herniation: Surgical repair and review. *Asian Cardiovasc Thorac Ann*. 2018;26(5):416-418.
106. Oren V, Kozenitzky I, Babiacki A, et al. Unusual cough related stress injuries. *Eur J Nucl Med*. 1988;14(2):108-111.
107. O'Shea M, Cleasby M. Images in clinical medicine. Lung herniation after cough-induced rupture of intercostal muscle. *N Engl J Med*. 2012;366(1):74.
108. Ozlu MF, Ayhan SS, Ozturk S, et al. Abdominal wall hematoma related to severe cough in a patient under antiaggregant and anticoagulant therapy. *Intern Emerg Med*. 2012;7 Suppl 2:S157-158.
109. Papanikitas J, Sutcliffe RP, Rohatgi A, et al. Bilateral retrovascular femoral hernia. *Ann R Coll Surg Engl*. 2008;90(5):423-424.
110. Pareja Lopez A, Martin Esteve IM, Alvarez Garcia AF. Intercostal bleeding due to persistent cough in a case of acute exacerbation of copd. Selective treatment by arterial embolization. *Med Clin (Barc)*. 2017;148(8):384-385.
111. Patel S, Thyagarajan B, Lalani I. Spontaneous rectus sheath haematoma secondary to severe coughing in a patient with no other precipitating factors. *BMJ Case Rep*. 2016;2016.
112. Paulley JW, Lees DH, Pearson AC. Cough fracture in late pregnancy. *Br Med J*. 1949;1(4594):135-137.
113. Prasad S, Baur LA. Fracture of the first rib as a consequence of pertussis infection. *J Paediatr Child Health*. 2001;37(1):91-93.
114. Reper P, Knafel M, Faraoni D, et al. Cough-induced rupture of the right diaphragm and abdominal herniation. *Intensive Care Med*. 2012;38(7):1237-1238.
115. Roberge RJ, Morgenstern MJ, Osborn H. Cough fracture of the ribs. *Am J Emerg Med*. 1984;2(6):513-517.
116. Rogers FB, Leavitt BJ, Jensen PE. Traumatic transdiaphragmatic intercostal hernia secondary to coughing: Case report and review of the literature. *J Trauma*. 1996;41(5):902-903.
117. Sala C, Bonaldi M, Mariani P, et al. Right post-traumatic diaphragmatic hernia with liver and intestinal dislocation. *J Surg Case Rep*. 2017;2017(3):rjw220.
118. Sano A, Tashiro K, Fukuda T. Cough-induced rib fractures. *Asian Cardiovasc Thorac Ann*. 2015;23(8):958-960.
119. Sternfeld M, Hay E, Eliraz A. Postnasal drip causing multiple cough fractures. *Ann Emerg Med*. 1992;21(5):587.
120. Warmington WT. Four cases of cough fracture. *Ulster Med J*. 1966;35(1):72-74.
121. Yeh CF, Su SC. Cough-induced rib fracture in a young healthy man. *J Formos Med Assoc*. 2012;111(3):179-180.
122. Yu WY, Wang CP, Ng KC, et al. Successful embolization of a ruptured intercostal artery after violent coughing. *Am J Emerg Med*. 2006;24(2):247-249.
123. Aaronson DW, Rovner RN, Patterson R. Cough syncope: Case presentation and review. *J Allergy*. 1970;46(6):359-363.
124. Ariturk Z, Alici H, Cakici M, et al. A rare cause of syncope: Cough. *Eur Rev Med Pharmacol Sci*. 2012;16 Suppl 1:71-72.
125. Awad J, Schiller O. Cough syncope with herpetic tracheobronchitis. *Isr Med Assoc J*. 2001;3(4):284-285.
126. Bahra A, Goadsby PJ. Cough headache responsive to methysergide. *Cephalalgia*. 1998;18(7):495-496.
127. Benditt DG, Samniah N, Pham S, et al. Effect of cough on heart rate and blood pressure in patients with "cough syncope". *Heart Rhythm*. 2005;2(8):807-813.

128. Berciano J, Poca MA, Garcia A, et al. Paroxysmal cervicobrachial cough-induced pain in a patient with syringomyelia extending into spinal cord posterior gray horns. *J Neurol*. 2007;254(5):678-681.
129. Buzzi MG, Formisano R, Colonnese C, et al. Chiari-associated exertional, cough, and sneeze headache responsive to medical therapy. *Headache*. 2003;43(4):404-406.
130. Chadda KD, Peters R, Bloomfield B, et al. Cough syncope treated with a long-term vasoconstrictor. *JAMA*. 1986;255(10):1289-1291.
131. Chen CT, Lin JC, Chang SY. Cough syncope induced by paraspinal abscess. *Am J Med Sci*. 2014;347(1):86-87.
132. Cordenier A, De Hertogh W, De Keyser J, et al. Headache associated with cough: A review. *J Headache Pain*. 2013;14:42.
133. Derbes VJ, Kerr A, Jr. After-cough fainting as a complication of bronchial asthma. *South Med J*. 1953;46(7):701-707.
134. Dickinson O, Nijjar PS, Detloff BL, et al. Vasodepressor cough syncope masked by sleep apnea-induced asystole. *J Cardiovasc Electrophysiol*. 2012;23(9):1024-1027.
135. Enamorado JE, Witsch J, Aviles AH, et al. Neurological picture. Acute appearance of a carotid pseudoaneurysm during coughing. *J Neurol Neurosurg Psychiatry*. 2015;86(1):120.
136. Ertsey C, Jelencsik I. Cough headache associated with chiari type-i malformation: Responsiveness to indomethacin. *Cephalalgia*. 2000;20(5):518-520.
137. Fitzsimons MG. Case report: Cough syncope in a u.S. Army aviator. *Aviat Space Environ Med*. 1998;69(5):515-516.
138. Gelisse P, Genton P. Cough syncope misinterpreted as epileptic seizure. *Epileptic Disord*. 2008;10(3):223-224.
139. Gupta VK. Ocular compression maneuver aborts benign cough-induced headache. *Headache*. 2005;45(5):612-614.
140. Haslam RH, Freigang B. Cough syncope mimicking epilepsy in asthmatic children. *Can J Neurol Sci*. 1985;12(1):45-47.
141. Ireland PD, Mickelsen D, Rodenhouse TG, et al. Evaluation of the autonomic cardiovascular response in arnold-chiari deformities and cough syncope syndrome. *Arch Neurol*. 1996;53(6):526-531.
142. Ishizuka S, Yanai M, Yamaya M, et al. Cough syncope treated with imidapril in an elderly patient with dysphagia. *Chest*. 2000;118(1):279.
143. Jenkins P, Clarke SW. Cough syncope: A complication of adult whooping cough. *Br J Dis Chest*. 1981;75(3):311-313.
144. Katz RM. Cough syncope in children with asthma. *J Pediatr*. 1970;77(1):48-51.
145. Kau T, Rabitsch E, Celedin S, et al. When coughing can cause stroke--a case-based update on cerebral air embolism complicating biopsy of the lung. *Cardiovasc Intervent Radiol*. 2008;31(5):848-853.
146. Kerr A, Jr., Eich RH. Cerebral concussion as a cause of cough syncope. *Arch Intern Med*. 1961;108:248-252.
147. Krediet CT, Wieling W. Edward p. Sharpey-schafer was right: Evidence for systemic vasodilatation as a mechanism of hypotension in cough syncope. *Europace*. 2008;10(4):486-488.
148. Kreitmann L, Collet F, Gouello JP, et al. Cough syncope and multiple pulmonary nodules. *Intern Emerg Med*. 2011;6(4):377-379.
149. Kusuyama T, Iida H, Kino N, et al. Cough syncope induced by gastroesophageal reflux disease. *J Cardiol*. 2009;54(2):300-303.
150. Lin YH, Chen SY, Liu KL, et al. Queer consequence of cough: Atrial myxoma embolization with acute occlusion of the abdominal aorta. *Am J Emerg Med*. 2010;28(2):261 e261-262.
151. Lindegaard KF, Skalpe IO, Sjaastad O. Cough syncope: The possible relation to hydrocephalus ex vacuo. *Eur Neurol*. 1977;15(6):340-344.
152. Linzer M, McFarland TA, Belkin M, et al. Critical carotid and vertebral arterial occlusive disease and cough syncope. *Stroke*. 1992;23(7):1017-1020.

153. Mahawish K. Cough-induced hemiparesis: An unusual manifestation of cord compression. *BMJ Case Rep.* 2016;2016.
154. Marinella MA. A car crash complicating influenza. *Mayo Clin Proc.* 2004;79(8):1087-1088.
155. Mattle HP, Nirikko AC, Baumgartner RW, et al. Transient cerebral circulatory arrest coincides with fainting in cough syncope. *Neurology.* 1995;45(3 Pt 1):498-501.
156. Maznyczka A, Squire IB. Cough syncope--a diagnosis under pressure. *Lancet.* 2010;376(9739):486.
157. McCorry DJ, Chadwick DW, Barber P, et al. Cough syncope in heavy goods vehicle drivers. *QJM.* 2004;97(9):631-632.
158. McIntosh HD, Estes EH, Warren JV. The mechanism of cough syncope. *Am Heart J.* 1956;52(1):70-82.
159. Moncada E, Graff-Radford SB. Cough headache presenting as a toothache: A case report. *Headache.* 1993;33(5):240-243.
160. Mereu R, Taraborrelli P, Sau A, et al. Diagnostic role of head-up tilt test in patients with cough syncope. *Europace.* 2016;18(8):1273-1279.
161. Nomura M, Kannuki S, Kuwayama K, et al. A patient with wallenberg's syndrome induced by severe cough. *J Clin Neurosci.* 2004;11(2):179-182.
162. Ozge C, Atis S, Ozge A, et al. Cough headache: Frequency, characteristics and the relationship with the characteristics of cough. *Eur J Pain.* 2005;9(4):383-388.
163. O'Doherty DS. Tussive syncope and its relation to epilepsy. *Neurology.* 1953;3(1):16-21.
164. Oertel MF, Korinth MC, Reinges MH, et al. Pneumorrhachis of the entire spinal canal. *J Neurol Neurosurg Psychiatry.* 2005;76(7):1036.
165. Pascual J, Gonzalez-Mandly A, Martin R, et al. Headaches precipitated by cough, prolonged exercise or sexual activity: A prospective etiological and clinical study. *J Headache Pain.* 2008;9(5):259-266.
166. Pascual J, Iglesias F, Oterino A, et al. Cough, exertional, and sexual headaches: An analysis of 72 benign and symptomatic cases. *Neurology.* 1996;46(6):1520-1524.
167. Pavao Martins I, Viana P. "Cough hemicrania" - an overlapping form of headache: Case reports. *Headache.* 2017;57(5):796-800.
168. Perini F, Toso V. Benign cough "cluster" headache. *Cephalalgia.* 1998;18(7):493-494.
169. Peters JT. Tussive unconsciousness. *J La State Med Soc.* 1961;113:6-8.
170. Puetz TR, Vakil N. Gastroesophageal reflux-induced cough syncope. *Am J Gastroenterol.* 1995;90(12):2204-2206.
171. Rao DS, Infeld MD, Stern RC, et al. Cough-induced hemiplegic migraine with impaired consciousness in cystic fibrosis. *Pediatr Pulmonol.* 2006;41(2):171-176.
172. Salameh A, Klein M, Klein N, et al. Coughing into the darkness. *Lancet.* 2011;377(9778):1718.
173. Sandford B, Naylor AR. At the back of my mind. *Eur J Vasc Endovasc Surg.* 2015;49(6):660.
174. Sansur CA, Heiss JD, DeVroom HL, et al. Pathophysiology of headache associated with cough in patients with chiari i malformation. *J Neurosurg.* 2003;98(3):453-458.
175. Siclari F, Hirt L, Meuli R, et al. Bilateral carotid thrombus formation after strenuous coughing. *Eur J Neurol.* 2009;16(7):e122-123.
176. Smith WS, Messing RO. Cerebral aneurysm presenting as cough headache. *Headache.* 1993;33(4):203-204.
177. Stern RC, Horwitz SJ, Doershuk CF. Neurologic symptoms during coughing paroxysms in cystic fibrosis. *J Pediatr.* 1988;112(6):909-912.
178. Strauss MJ, Longstreth WT, Jr., Thiele BL. Atypical cough syncope. *JAMA.* 1984;251(13):1731.
179. Styczynski G, Dobosiewicz A, Abramczyk P, et al. Internal jugular vein valve insufficiency in cough syncope. *Neurology.* 2008;70(10):812-813.
180. Symonds C. Cough headache. *Brain.* 1956;79(4):557-568.
181. Takazawa T, Ikeda K, Kano O, et al. A case of sinus arrest and post-hiccup cough syncope in medullary infarction. *J Stroke Cerebrovasc Dis.* 2014;23(3):566-571.

182. Tanaka T, Inoue H, Aizawa H, et al. Case of cough syncope with seizure. *Respiration*. 1994;61(1):48-50.
183. Torrington KG, Adornato BT. Cough radiculopathy--another cause of pain in the neck. *West J Med*. 1984;141(3):379-380.
184. Tsai S, Baig MS, Abrantes-Pais F, et al. Cough-induced transient ischemic attack treated with revascularization of the external carotid artery. *J Vasc Surg*. 2014;60(6):1657-1660.
185. Tsuji H, Takazakura E, Terada Y, et al. Ct demonstration of spinal epidural emphysema complicating bronchial asthma and violent coughing. *J Comput Assist Tomogr*. 1989;13(1):38-39.
186. Ulyatt DB, Judson JA, Trubuhovich RV, et al. Cerebral arterial air embolism associated with coughing on a continuous positive airway pressure circuit. *Crit Care Med*. 1991;19(7):985-987.
187. Vincent JL, Pinsky MR. Cough-induced syncope. *Intensive Care Med*. 1988;14(6):591-594.
188. Viticchi G, Falsetti L, Baruffaldi R, et al. Acute carotid dissection in an adult caused by pertussis. *J Stroke Cerebrovasc Dis*. 2013;22(8):e635-636.
189. Waldmann V, Combes N, Narayanan K, et al. Cough syncope. *Am J Med*. 2017;130(7):e295-e296.
190. Williams B. Cough headache due to craniospinal pressure dissociation. *Arch Neurol*. 1980;37(4):226-230.
191. Wolman L. Cerebral damage in whooping-cough. *Br Med J*. 1962;2(5307):775-776.
192. Yagi T, Koizumi Y. 3d analysis of cough-induced nystagmus in a patient with superior semicircular canal dehiscence. *Auris Nasus Larynx*. 2009;36(5):590-593.
193. Zeng W, Deng H. Cough syncope: Constrictive pericarditis. *Intern Med*. 2013;52(4):463-465.
194. Castelnovo P, Mauri S, Bignami M. Spontaneous compressive orbital emphysema of rhinogenic origin. *Eur Arch Otorhinolaryngol*. 2000;257(10):533-536.
195. Fajgenbaum MAP, Antonakis SN, Membrey L, et al. Acute retinal detachment induced by the valsalva manoeuvre in morning glory disc anomaly. *BMJ Case Rep*. 2018;2018.
196. Kashani S, Aslam SA, Bessant D. Valsalva retinopathy presenting with subhyaloid haemorrhage. *Emerg Med J*. 2009;26(1):74.
197. Kwong S, Daniel A, Kalra S, et al. Transient cough-induced blindness in temporal arteritis. *Neurology*. 2006;67(8):1520.
198. Marimuthu LM, Ranjan R, Chandrasekaran V, et al. Sub-conjunctival hemorrhage following a bout of cough: A harbinger of underlying bleeding diathesis. *Indian J Pediatr*. 2017;84(10):804-805.
199. Marous CL, Sioufi K, Shields CL, et al. Coughing-induced suprachoroidal hemorrhage simulating melanoma in two cases. *Retin Cases Brief Rep*. 2018;12(4):336-341.
200. Reid JM, Williams D. Panda sign due to severe coughing. *J R Coll Physicians Edinb*. 2013;43(1):35.
201. Rieger G. A rare cause of complete "spectacle hematoma". *Ger J Ophthalmol*. 1996;5(6):415-416.
202. Shaikh A, Ahmado A, James B. Severe cough: A cause of late bleb leak. *J Glaucoma*. 2003;12(2):181-183.
203. Romano P. On coughing and the open eye. *Ophthalmic Surg*. 1983;14(12):1041-1042.
204. Braidó F, Baiardini I, Tarantini F, et al. Chronic cough and qol in allergic and respiratory diseases measured by a new specific validated tool-cciq. *J Investig Allergol Clin Immunol*. 2006;16(2):110-116.
205. Deslee G, Burgel PR, Escamilla R, et al. Impact of current cough on health-related quality of life in patients with copd. *Int J Chron Obstruct Pulmon Dis*. 2016;11:2091-2097.
206. French CL, Crawford SL, Bova C, et al. Change in psychological, physiological, and situational factors in adults after treatment of chronic cough. *Chest*. 2017;152(3):547-562.
207. French CL, Irwin RS, Curley FJ, et al. Impact of chronic cough on quality of life. *Arch Intern Med*. 1998;158(15):1657-1661.
208. Glaspole IN, Chapman SA, Cooper WA, et al. Health-related quality of life in idiopathic pulmonary fibrosis: Data from the australian ipf registry. *Respirology*. 2017;22(5):950-956.
209. Hrisanfow E, Hagglund D. Impact of cough and urinary incontinence on quality of life in women and men with chronic obstructive pulmonary disease. *J Clin Nurs*. 2013;22(1-2):97-105.
210. Newcombe PA, Sheffield JK, Petsky HL, et al. A child chronic cough-specific quality of life measure: Development and validation. *Thorax*. 2016;71(8):695-700.

211. Petsios KT, Priftis KN, Tsoumakas C, et al. Cough affects quality of life in asthmatic children aged 8-14 more than other asthma symptoms. *Allergol Immunopathol (Madr)*. 2009;37(2):80-88.
212. Shirai T, Mikamo M, Shishido Y, et al. Impaired cough-related quality of life in patients with controlled asthma with gastroesophageal reflux disease. *Ann Allergy Asthma Immunol*. 2012;108(5):379-380.
213. Tashkin DP, Volkmann ER, Tseng CH, et al. Improved cough and cough-specific quality of life in patients treated for scleroderma-related interstitial lung disease: Results of scleroderma lung study ii. *Chest*. 2017;151(4):813-820.
214. Alves GR, Silva RV, Correa JR, et al. Spontaneous pneumomediastinum (hamman's syndrome). *J Bras Pneumol*. 2012;38(3):404-407.
215. Asenjo M, Angelina M. Images in clinical medicine. Lung herniation with coughing. *N Engl J Med*. 2015;372(5):464.
216. Benedict EB. Rupture of the bronchus from bronchoscopy during a paroxysm of coughing. *JAMA*. 1961;178:509-510.
217. Bilir O, Yavasi O, Ersunan G, et al. Pneumomediastinum associated with pneumopericardium and epidural pneumatosis. *Case Rep Emerg Med*. 2014;2014:275490.
218. Bundy JT, Pontier PJ. Cough-induced hydrothorax in peritoneal dialysis. *Perit Dial Int*. 1994;14(3):293.
219. Candas F, Yildizhan A, Gorur R, et al. Is bilateral chylothorax possible after simple cough? Yes. *Asian Cardiovasc Thorac Ann*. 2015;23(4):471-473.
220. Chiba Y, Kakuta H. Massive subcutaneous emphysema, pneumomediastinum, and spinal epidural emphysema as complications of violent coughing: A case report. *Auris Nasus Larynx*. 1995;22(3):205-208.
221. Cho R, Zamora F, Dincer HE. Anteromedial arytenoid subluxation due to severe cough. *J Bronchology Interv Pulmonol*. 2018;25(1):57-59.
222. Chua TC, Brown KM, Yan TD. Sinister cause of abdominal wall bruising. *ANZ J Surg*. 2015;85(7-8):588-589.
223. Franco AI, Arponen S, Hermoso F, et al. Subcutaneous emphysema, pneumothorax and pneumomediastinum as a complication of an asthma attack. *Indian J Radiol Imaging*. 2019;29(1):77-80.
224. Hamid M, Ghani AR, Ullah W, et al. Spontaneous lung herniation leading to extensive subcutaneous emphysema, pneumothorax, pneumomediastinum, and pneumopericardium. *Cureus*. 2018;10(6):e2861.
225. Irwin RS, Ownbey R, Cagle PT, et al. Interpreting the histopathology of chronic cough: A prospective, controlled, comparative study. *Chest*. 2006;130(2):362-370.
226. Irwin RS, Rosen MJ, Braman SS. Cough. A comprehensive review. *Arch Intern Med*. 1977;137(9):1186-1191.
227. Kao P, Fang HY, Lu TY, et al. Strangulation of chronic transdiaphragmatic intercostal hernia. *Ann Thorac Surg*. 2014;97(6):e155-157.
228. Kara E, Kaya Y, Zeybek R, et al. A case of a diaphragmatic rupture complicated with lacerations of stomach and spleen caused by a violent cough presenting with mediastinal shift. *Ann Acad Med Singapore*. 2004;33(5):649-650.
229. Khayer BL. Simple cough as a cause of subcutaneous emphysema. *BMJ Case Rep*. 2014;2014.
230. Mao A, Kammen BF. Dynamic cervical lung herniation in a 10-year-old girl with cough. *Pediatr Radiol*. 2007;37(10):1058.
231. Park SJ, Park JY, Jung J, et al. Clinical manifestations of spontaneous pneumomediastinum. *Korean J Thorac Cardiovasc Surg*. 2016;49(4):287-291.
232. Patolia S, Zahir M, Schmidt F, et al. Bilateral pneumothorax after bronchoscopy without biopsy--a rare complication: Case presentation and literature review. *J Bronchology Interv Pulmonol*. 2012;19(1):57-60.
233. Roe PF, Kulkarni BN. Pneumomediastinum in children with cough. *Br J Dis Chest*. 1967;61(3):147-150.

234. Rousie C, Van Damme H, Radermecker MA, et al. Spontaneous tracheal rupture: A case report. *Acta Chir Belg.* 2004;104(2):204-208.
235. Rivara CB, Chevrolet JC, Gasche Y, et al. Fatal brain gas embolism during non-invasive positive pressure ventilation. *BMJ Case Rep.* 2008;2008:bcr0620080163.
236. Roh JL, Lee JH. Spontaneous tracheal rupture after severe coughing in a 7-year-old boy. *Pediatrics.* 2006;118(1):e224-227.
237. Rydell JR, Jennings WK. Emergency cervical mediastinotomy for massive mediastinal emphysema. *AMA Arch Surg.* 1955;70(5):647-653.
238. Sayhan M, Orak M, Ustundag M. Posttussive pneumomediastinum. *Lung.* 2008;186(6):351.
239. Sheka KP, Williams LG. Spontaneous intercostal lung hernia. *J Natl Med Assoc.* 1984;76(12):1210, 1212-1213.
240. Sloth-Nielsen J, Jurik AG. Spontaneous intercostal pulmonary hernia with subsegmental incarceration. *Eur J Cardiothorac Surg.* 1989;3(6):562-564.
241. Sulaiman A, Cottin V, De Souza Neto EP, et al. Cough-induced intercostal lung herniation requiring surgery: Report of a case. *Surg Today.* 2006;36(11):978-980.
242. Tack D, Wattiez A, Schtickzelle JC, et al. Spontaneous lung herniation after a single cough. *Eur Radiol.* 2000;10(3):500-502.
243. Wang H, Nugent WC. Cough-induced bilateral spontaneous pneumothorax. *Ann Thorac Surg.* 2010;90(4):1363-1365.
244. Young S, Bitsakou H, Caric D, et al. Coughing can relieve or exacerbate symptoms in asthmatic patients. *Respir Med.* 1991;85 Suppl A:7-12.
245. Field SK, Escalante P, Fisher DA, et al. Cough due to tb and other chronic infections: Chest guideline and expert panel report. *Chest.* 2018;153(2):467-497.
246. Lindsley WG, Pearce TA, Hudnall JB, et al. Quantity and size distribution of cough-generated aerosol particles produced by influenza patients during and after illness. *J Occup Environ Hyg.* 2012;9(7):443-449.
247. Wang Y, Shao F, Zhang L, et al. Increased 18f-fdg uptake in multiple muscles in a patient with violent cough. *Clin Nucl Med.* 2017;42(6):451-453.