

Surgical Treatment of Parastomal Hernias after Cystectomy and Ileal Conduit Urinary Diversion – A systematic review

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Appendix 2- Search strategy

Search in detail:

PubMed

17.12.2020:

((((abdominal hernia[MeSH Terms]) OR (hernia[MeSH Terms])) OR (hernia)) OR (abdominal hernia)) OR (parastomal hernia[MeSH Terms]) OR (parastomal hernia)) AND (((((((cystectomy[MeSH Terms]) OR (cystectomy)) OR (urinary diversion[MeSH Terms]) OR (urinary diversion)) OR (ileal conduit[MeSH Terms]) OR (ileal conduit))) OR (urostomy))

The screenshot shows the PubMed Advanced Search Builder interface. The search query entered is: *((((abdominal hernia[MeSH Terms]) OR (hernia[MeSH Terms])) OR (hernia)) OR (abdominal hernia)) OR (parastomal hernia[MeSH Terms]) OR (parastomal hernia)) AND (((((((cystectomy[MeSH Terms]) OR (cystectomy)) OR (urinary diversion[MeSH Terms]) OR (urinary diversion)) OR (ileal conduit[MeSH Terms]) OR (ileal conduit))) OR (urostomy))*. The results table shows 367 results for search #6, with a time of 06:14:18.

Search	Actions	Details	Query	Results	Time
#6	...	▼	Search: (((((((abdominal hernia[MeSH Terms]) OR (hernia[MeSH Terms])) OR (hernia)) OR (abdominal hernia)) OR (parastomal hernia[MeSH Terms]) OR (parastomal hernia)) AND (((((((cystectomy[MeSH Terms]) OR (cystectomy)) OR (urinary diversion[MeSH Terms]) OR (urinary diversion)) OR (ileal conduit[MeSH Terms]) OR (ileal conduit))) OR (urostomy))	367	06:14:18

((((cystectomy) OR urinary diversion) OR ileal conduit) OR urostomy)) AND ((hernia) OR parastomal hernia)

Advanced Search Results - PubMed x +

https://pubmed.ncbi.nlm.nih.gov/advanced/

National Library of Medicine
National Center for Biotechnology Information

Log in

PubMed.gov
User Guide

PubMed Advanced Search Builder

Add terms to the query box

All Fields Enter a search term ADD Show Index

Query box

Enter / edit your search query here Search

History and Search Details Download Delete

Search	Actions	Details	Query	Results	Time
#1	...	>	Search: (((((cystectomy) OR urinary diversion) OR ileal conduit) OR urostomy)) AND ((hernia) OR parastomal hernia)	367	08:02:07

Showing 1 to 1 of 1 entries

Results: 367

Imported to Endnote: 367

After removal of duplicates: 356

Embase:

17.12.2020

((cystectomy or urinary diversion or ileal conduit or urostomy) and parastomal hernia).af.

The screenshot displays the Ovid search interface. At the top, the search bar contains the query: ((cystectomy or urinary diversion or ileal conduit or urostomy) and parastomal hernia).af. The search results section shows 234 results. The first result is highlighted in yellow and reads: "Parastomal hernia repair with onlay mesh remains a safe and effective approach." The authors are listed as De Robles M.S., Young C.J., and the journal is BMC surgery, 20 (1) (pp 296), 2020. The date of publication is 24 Nov 2020. The interface includes navigation options like "View By" (Text, Multimedia), "Search Information", and "Limits".

Results: 234

Updated to Endnote: 234

After removal duplicates: 128

Web of Science:

17.12.2020

Web of Science

Search

Results: 250
(from Web of Science Core Collection)

You searched for: ALL FIELDS:
(cystectomy OR urinary diversion
OR ileal conduit OR urostomy) AND
ALL FIELDS: (hernia OR parastomal
hernia).

Timespan: All years. Indexes: SCI-
EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-
SSH, ESCL
...Less

Create an alert

Refine Results

Search within results for...

Filter results by:

Open Access (55)

Refine

Sort by: Date JF Times Cited Usage Count Relevance More

Select Page Export to EndNote Desktop More Add to Marked List

Analyze Results
Create Citation Report

1. Short-term outcomes of parastomal hernia prophylaxis with Stapled Mesh stoma Reinforcement Technique (SMART) in permanent stomas
By: Chen, Michelle Zhiyun; Gilmore, Andrew
ANZ JOURNAL OF SURGERY
Early Access: NOV 2020
Full Text? Full Text from Publisher View Abstract

Times Cited: 0
(from Web of Science Core Collection)
Usage Count

2. Strangulated Internal Hernia Beneath the Obturator Nerve After Laparoscopic Radical Cystectomy With Extended Pelvic Lymph Node Dissection
By: Kanno, Toru; Otsuka, Kazuo; Takahashi, Toshifumi; et al.
UROLOGY Volume: 145 Pages: 11-12 Published: NOV 2020
Full Text? Full Text from Publisher View Abstract

Times Cited: 0
(from Web of Science Core Collection)
Usage Count

3. Preventing Parastomal Hernia After Ileal Conduit by the Use of a Prophylactic Mesh: A Randomised Study
By: Liedberg, Fredrik; Kollberg, Petter; Allerbo, Marie; et al.
EUROPEAN JOURNAL OF SURGERY Volume: 78 Issue: 6 Page: 757-763 Published: NOV 2020

Times Cited: 3
(from Web of Science Core Collection)

Results: 250

Imported to Endnote: 250

After removal of duplicates: 58

ALL FIELDS: (cystectomy OR urinary diversion OR ileal conduit OR urostomy) AND ALL FIELDS: (hernia OR parastomal hernia)

CENTRAL database:

18.12.2020

(cystectomy OR urinary deviation OR ileal conduit OR urostomy) in Title Abstract Keyword AND parastomal hernia OR hernia in Title Abstract Keyword - (Word variations have been searched)

The screenshot shows the Cochrane Central Register of Controlled Trials search interface. The search query is: **(cystectomy OR urinary deviation OR ileal conduit OR urostomy) in Title Abstract Keyword AND parastomal hernia OR hernia in Title Abstract Keyword - (Word variations have been searched)**. The results show 28 trials. A filter table on the left shows the distribution of trials by year first published: 2020 (2), 2019 (4), and 2018 (0). The search results are displayed in a table with columns for Cochrane Reviews (0), Cochrane Protocols (0), Trials (28), Editorials (0), Special Collections (0), and Clinical Answers (0). A purple banner at the top of the results section reads: "For COVID-19 related studies, please also see the Cochrane COVID-19 Study Register". Below the banner, the search results are listed, including the Cochrane Central Register of Controlled Trials, Issue 12 of 12, December 2020. There is a "Select all (28)" button and an "Export selected citation(s)" link.

Year	Count
2020	2
2019	4
2018	0

Category	Count
Cochrane Reviews	0
Cochrane Protocols	0
Trials	28
Editorials	0
Special Collections	0
Clinical Answers	0

28 Trials matching (cystectomy OR urinary deviation OR ileal conduit OR urostomy) in Title Abstract Keyword AND parastomal hernia OR hernia in Title Abstract Keyword - (Word variations have been searched)

Cochrane Central Register of Controlled Trials
Issue 12 of 12, December 2020

Select all (28) Export selected citation(s)

Results: 0 reviews, 28 trials

Imported to Endnote: 28

After removal of duplicates: 26

Clinicaltrials.gov

18.12.2020

COVID-19 is an emerging, rapidly evolving situation.
Get the latest public health information from CDC: <https://www.coronavirus.gov>.
Get the latest research information from NIH: <https://www.nih.gov/coronavirus>.

NIH U.S. National Library of Medicine
ClinicalTrials.gov
Find Studies ▾ About Studies ▾ Submit Studies ▾ Resources ▾ About Site ▾ PRS Login

Home > Search Results

Modify Search Start Over

6 Studies found for: **cystectomy OR urinary diversion OR ileal conduit OR urostomy | parastomal hernia OR hernia**

Not enough studies found? Try these [search suggestions](#).

List By Topic On Map Search Details

Hide Filters Download Show/Hide

Row	Saved	Status	Study Title	Conditions	Interventions	Locations
1	<input type="checkbox"/>	Unknown	Role of Mesh Stoma Reinforcement Technique (MSRT) in Prevention of Parastomal Hernia After Ileal Conduit Urinary Diversion	<ul style="list-style-type: none">Ileal ConduitParastomal Hernia	<ul style="list-style-type: none">Procedure: Polypropylene Mesh Stoma reinforcement technique with ileal conduit urinary diversionProcedure: ileal conduit urinary diversion	<ul style="list-style-type: none">Urology and Nephrology, Mansoura, DK, Egypt
2	<input type="checkbox"/>	Terminated Has Results	Prevention of Parastomal Hernia by Mesh Placement	<ul style="list-style-type: none">Parastomal Hernia	<ul style="list-style-type: none">Device: Ethicon Physiamesh	<ul style="list-style-type: none">University Of Miami, Miami, Florida, United S
3	<input type="checkbox"/>	Active, not recruiting	Post-operative Hernias After Radical Cystectomy	<ul style="list-style-type: none">Evisceration, Traumatic	<ul style="list-style-type: none">Procedure: Cystectomy	<ul style="list-style-type: none">Uhmontpellier, Montpellier, France

Filters
Apply Clear

Status

Recruitment

- Not yet recruiting
- Recruiting
- Enrolling by invitation
- Active, not recruiting

Results: 6 trials

Imported to Endnote: 6

After removal of duplications: 6

Additional sources:

- European hernia society: Antoniou SA, Agresta F, Garcia Alamino JM et al (2018) European Hernia Society guidelines on prevention and treatment of parastomal hernias. *Hernia* 22:183–198.
- European hernia society: Congres abstracts 2019 & 2020: 2 abstract with subgroups -> sent e-mails: no additional data available
 - o Laparoscopic treatment of parastomal hernias: a single center experience with the Pauli procedure M. Borshchigov, C. Gröger, e.a.
 - o Parastomal hernias: a more and more surgical challenge J. A. Martín
- American hernia society: Congres abstracts 2019 & 2020: 1 abstract -> sent e-mail: article will follow soon
 - o KEYHOLE VERSUS SUGARBAKER TECHNIQUES IN PARASTOMAL HERNIA REPAIR AT BRICKER CONDUIT: A RETROSPECTIVE NATIONWIDE COHORT STUDY WITH LONG-TERM FOLLOW-UP Elisa Mäkäräinen-Uhlbäck, MD ; Jaana Vironen, MD, PhD
- Systematic reviews:
 - o Narang SK, Alam NN, Campain NJ, Pathak S, McGrath JS, Daniels IR, et al. Parastomal hernia following cystectomy and ileal conduit urinary diversion: a systematic review. *Hernia*. 2017;21(2):163-75.
 - o DeAsis FJ, Lapin B, Gitelis ME, Ujiki MB (2015) Current state of laparoscopic parastomal hernia repair: a meta-analysis. *World J Gastroenterol* 21:8670–8677
 - o Hansson BME, Slater NJ, Van der Velden AS, et al. Surgical techniques for parastomal hernia repair: a systematic review of the literature. *Ann Surg*. 2012;255(4):685–95.
 - o Aquina CT, Iannuzzi JC, Probst CP, Kelly KN, Noyes K, Fleming FJ, Monson JR. Parastomal hernia: a growing problem with new solutions. *Dig Surg*. 2014;31(4-5):366-76. doi: 10.1159/000369279. Epub 2014 Dec 13. PMID: 25531238.

Screening by title:

Results in Endnote: 881

After removal of duplicates: 571+7 added based on references +3 from congress abstracts

After Screening by title: 130

Screening by abstract:

Results in Endnote: 127 (+3 conference abstracts)

After screening by abstract: 42 (+3 conference abstracts)

Author	Inclusion	Reason for exclusion	References checked
Abaza 2015	No after abstract	Inadequate study design	N/A
Abdallah 2009	No after abstract	Not matching inclusion criteria	N/A
Aldaahm 2019	Yes	Robot-assisted repair, 7 cases: conference abstract	None
Amimi 2015	No after abstract	Not matching inclusion criteria	N/A
Ando 2020	No after abstract	Insufficient patient number	N/A
Antor 2017	Yes	Laparoscopic repair, 9 cases: conference abstract	None
Avallone 2018	No after abstract	Not matching inclusion criteria	N/A
Ayuso 2020	Yes	Robot-assisted repair, 5 cases urostomy -	DeAsis 2015
Berger 2007	Yes	Laparoscopic repair, 66 patients; subgroup?	None
Berrevoet 2018	No after abstract	Insufficient patient number	N/A
Bos 1996	Yes	Not available?	None
Bosanquet 2015	No after abstract	Inadequate study design	N/A
Castillo 2006	No after abstract	Not matching inclusion criteria	N/A
Craft 2008	Yes	Laparoscopic repair, 9 cases -> subgroup, older article, mixed techniques (keyhole and sugarbaker)	Steele 2003
Davis 2012	Yes	Laparoscopic repair, 11 cases; conference abstract, technique not specified	None
De Robles 2020	Yes	Mesh repair vs relocation, 16 cases (subgroup); both techniques combined in results	None
Deol 2003	No after abstract	Inadequate study design	N/A
Doddamani 2015	No after abstract	Not matching inclusion criteria	N/A
Donahue 2016	No after abstract	Not matching inclusion criteria	N/A
Dunet 2002	No after abstract	Inadequate study design	N/A
Elkarta 2020	No after abstract	Not matching inclusion criteria	N/A
Faba 2009	Yes	Conference abstract, different techniques, 28 cases	None
Faba 2011	Yes	Open repair, 19 cases	None
Farnham 2004	No after abstract	Not matching inclusion criteria	N/A

Fei 2011	No after abstract	Insufficient patient number	N/A
Fischer 2017	Yes	3 mesh repair, 9 cases (subgroup?)	None
Fitzgerald 2017	Yes	Top hat repair, 22 cases	Smarts 2011
Franks 2001	Yes	Keyhole technique, 6 cases	None
Gadissa 2010	No after abstract	Inadequate study design	N/A
Ganga 2017	No after abstract	Inadequate study design	N/A
Garcia Rojo 2016	No after abstract	Inadequate study design	N/A
Gilbert 2013	No after abstract	Not matching inclusion criteria	N/A
Gosselink 2015	No after abstract	Inadequate study design	N/A
Gould 2003	No after abstract	Inadequate study design	N/A
Gupta 2020	Yes	Robotic sugarbaker repair, 5 cases	None
Hansson 2013	No after abstract	Insufficient patient numbers	N/A
Helal 1997	Yes	Mesh repair, 19 cases	
Hetet 2005	No after abstract	Not matching inclusion criteria	N/A
Ho 2004	Yes	Lateral approach repair, 15 cases	None
Holmes 2002	No after abstract	Not matching inclusion criteria	N/A
Hopkins 1982	No after abstract	Inadequate study design	N/A
Husain 2008	No after abstract	Inadequate study design	N/A
Hussein 2017	Yes	Robot vs open, 6 cases	None
Hussein 2016	No after abstract	Not matching inclusion criteria	N/A
Jaipura 2020	Yes	Robotic sugarbaker repair, 6 cases; conference abstract	None
Jeekel 2017	Yes	Conservatively vs surgery, 6 cases (subgroup)	None
Kasperk 2000	No after abstract	Not matching inclusion criteria	N/A
Kaufman 1983	No after abstract	Insufficient patient numbers	N/A
Khanna 2012	No after abstract	Not matching inclusion criteria	N/A
Knap 2004	No after abstract	Not matching inclusion criteria	N/A
Kotes 2018	Yes	Open with mesh, 23 patients; subgroup + conference abstract	None

Kouba 2007	No after abstract	Not matching inclusion criteria	N/A
Kozlowski 2001	No after abstract	Insufficient patient numbers	N/A
Kroese 2018	Yes	Conservative vs surgery (subgroup?)	None
Lambrichts 2017	Yes	Conference abstract; conservative vs surgery, 8 cases (subgroup)	None
Lampel 2012	Yes	Intraperitoneal slit mesh (new kind of mesh), ? cases	None
LeBlanc 2005	No after abstract	Insufficient patient numbers	N/A
Lee 2018	No after abstract	Inadequate study design	N/A
Li 2019	No after abstract	Not matching inclusion criteria	N/A
Liard 2001	No after abstract	Not matching inclusion criteria	N/A
Lima 2010	No after abstract	Inadequate study design	N/A
Madaa 2014	No after abstract	Not matching inclusion criteria	N/A
Majumder 2016	No after abstract	Insufficient patient numbers	N/A
Mäkelä 1997	No after abstract	Not matching inclusion criteria	N/A
Malak 2017	No after abstract	Inadequate study design	N/A
Marshall 1975	Yes	Translocation?	None
McAllister 2018	No after abstract	Inadequate study design	N/A
McLemore 2007	Yes	Conventional vs laparoscopic, 19 cases (subgroup?)	Deol 2008
Mekhail 2017	No after abstract	Insufficient patient numbers	N/A
Mekhail 2017	No after abstract	Inadequate study design	N/A
Miller 2016	Yes	Retromuscular repair, 19 cases, conference abstract	None
Mirza 2008	No after abstract	Insufficient patient numbers	N/A
Mitchell 2011	No after abstract	Insufficient patient numbers	N/A
Mizrahi 2011	No after abstract	Insufficient patient numbers	N/A
Mizrahi 2012	No after abstract	Insufficient patient numbers	N/A
Movassaghi 2016	No after abstract	Not matching inclusion criteria	N/A
Myers 2016	No after abstract	Inadequate study design	N/A

Nomura 2003	No after abstract	Inadequate study design	N/A
Olmi 2019	Yes	Keyhole repair, 7 cases (subgroup?)	None
Oma 2017	No after abstract	Not matching inclusion criteria	N/A
Palanivelu 2017	No after abstract	Insufficient patient numbers	N/A
Pfister 2020	No after abstract	Not matching inclusion criteria	N/A
Raigani 2014	Yes	Relocation/mesh repair, 10 cases (subgroup?)	Rosen 2010
Rajapandian 2020	Yes	Laparoscopic keyhole repair, subgroup?	None
Ramalingam 2013	No after abstract	Inadequate study design	N/A
Ramalingam 2014	No after abstract	Inadequate study design	N/A
Rege 2019	No after abstract	Insufficient patient numbers	N/A
Rezaee 2020	No after abstract	Not matching inclusion criteria	N/A
Rodriguez 2009	No after abstract	Duplication	N/A
Rodriguez 2011	No after abstract	Duplication	N/A
Roghmann 2015	No after abstract	Not matching inclusion criteria	N/A
Romo 2015	No after abstract	Inadequate study design	N/A
Rosen 2010	No after abstract	Not matching inclusion criteria	N/A
Safadi 2004	Yes	Laparoscopic repair, 5 cases (subgroup?)	None
Sanseverino 2002	Yes	New technique, ? cases	None
Sanseverino 2002	No after abstract	Duplication	N/A
Shakir 2020	Yes	Robotic mesh repair, 7 cases; conference abstract	None
Sharma ?	Yes	Repair in general, 23 cases; conference abstract	None
Simeone 2003	No after abstract	Not matching inclusion criteria	N/A
Singh 2020	No after abstract	Inadequate study design	N/A
Smart 2011	No after abstract	Not matching inclusion criteria	N/A
Steele 2003	No after abstract	Not matching inclusion criteria	N/A
Su 2020	No after abstract	Not matching inclusion criteria	N/A
Sunaoshi 2003	No after abstract	Inadequate study design	N/A

Suwa 2016	No after abstract	Insufficient patient numbers	N/A
Syan 2012	No after abstract	Not matching inclusion criteria	N/A
Talab 2018	No after abstract	Inadequate study design	N/A
Tan 2017	No after abstract	Inadequate study design	N/A
Tatay 2017	Yes	New technique, 6 cases (subgroup?)	None
Trunbull 2003	No after abstract	Inadequate study design	N/A
Tully 2017	Yes	Open repair, 27-40 cases; conference abstract	None
Tully 2019	Yes	Open repair, 27-40 cases	Duplication?
Van Ginkel 2019	No after abstract	Not matching inclusion criteria	N/A
Velazco 2016	Yes	Different techniques, 16 cases (subgroup?)	None
Von Bodman 2012	Yes	Mesh repair, 13 cases	None
Von Rundstedt 2014	No after abstract	Insufficient patient numbers	N/A
Wara 2016	No after abstract	Not matching inclusion criteria	N/A
Warren 2015	Yes	Retromuscular repair, 6 patients (subgroup?); conference abstract	None
Wood 2004	No after abstract	Not matching inclusion criteria	N/A
Yang 2017	No after abstract	Inadequate study design	N/A
Ypsilantis 2015	Yes	Sugarbaker repair, 15 cases (subgroup?)	None

Screening by full text:

Results in Endnote: 42 (+ 3 conference abstracts)

After screening by full text: 6 (+conference abstracts/subgroup analyses)

(1) **Author:** Aldhaam NA, Elsayed AS 2019

Title: Minimally invasive management of robot-assisted radical cystectomy related complications: 15 years of experience

Journal: Journal of Endurology, *Conference abstract:* 37th World Congress of Endurology, Abu Dhabi

Patients: patients undergoing robot-assisted repair of cystectomy complications; *subgroup* of 7 patients with parastomal hernia

Intervention: Robot-assisted repair of any kind of complication requiring surgical repair after radical cystectomy

Clinical outcome: Need of surgical repair

E-mailed, no response.

EXCLUSION: conference abstract + subgroup: no additional/specific data available
(not matching inclusion criteria)

(2) **Author:** Antor M, Schwarz L 2017

Title: Laparoscopic repair of parastomal hernia after radical cystectomy

Journal: *Hernia*; *conference abstract*: 39th Annual International Congress of the European Hernia Society, Prevention and Prophylaxis beyond Hernia Surgery. Austria

Patients: 9 patients undergoing laparoscopic repair for symptomatic parastomal hernia of ileal conduit

Intervention: Laparoscopic repair of urostomy incisional hernia; technique not specified; no complications occurred.

Clinical outcome: postoperative complications short-term and long-term, hospital stay operation time, recurrence

E-mail not available.

EXCLUSION: conference abstract; no additional data available
(not matching inclusion criteria)

(3) **Author:** Ayuso SA, Shao, JM 2020

Title: Robotic sugarbaker parastomal hernia repair: technique and outcomes

Journal: *Hernia*

Patients: patients requiring surgical repair for parastomal hernia, *subgroup* of 5 urostomy patients

Intervention: Robotic sugarbaker repair of parastomal hernia's;

Clinical outcome: operative time, intra-operative complications, length of stay, postoperative complications, and recurrence

E-mailed, no response

EXCLUSION: subgroup; no specific data available
(not matching inclusion criteria)

(4) **Author:** Berger D, Bientzle M, 2007

Title: Laparoscopic repair of parastomal hernias: a single surgeon's experience in 66 patients

Patients: patients undergoing laparoscopic repair in a single center; 1 ileal conduit patient

Intervention: laparoscopic onlay mesh (sometimes 2 meshes)

Clinical outcome: recurrence

EXCLUSION: insufficient patient number

(5) **Author:** Bos SD

Title: Incidence and therapy of parastomal hernia in urology

Journal: *Nederlands Tijdschrift voor Geneeskunde*

EXCLUSION: review (inadequate study design)

(6) **Author:** Craft RO, Huguet KL 2008

Title: Laparoscopic parastomal hernia repair

Journal: Hernia

Patients: patients undergoing laparoscopic repair of parastomal hernias; *subgroup* of 9 patients with ileal conduit

Intervention: sugarbaker or keyhole laparoscopic parastomal hernia repair

Clinical outcome: operative time, intra-operative complications, length of stay, postoperative complications (not stated how fast after surgery), recurrence

E-mail, no response.

EXCLUSION: subgroup, no specific data available
(not matching inclusion criteria)

(7) **Author:** Davis PJ, Klassen DR 2012

Title: Laparoscopic repair of parastomal hernias of ileal conduits

Journal Surgical Endoscopy and Other Interventional Techniques; *Conference abstract:* 2012 Scientific Session of the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)

Patients: patients undergoing attempted laparoscopic repair of a ileal conduit parastomal hernia

Intervention: laparoscopic parastomal hernia repair, technique not specified

Outcome: operative time, blood loss, length of stay, postoperative complications (none are described), recurrence

E-mail, dataset not available anymore.

EXCLUSION: conference abstract; no additional data available
(not matching inclusion criteria)

(8) **Author:** De Robles MS, Young CJ 2020

Title: Parastomal hernia repair with onlay mesh remains a safe and effective approach

Journal: BMC Surg

Patients: patients undergoing relocation or mesh repair for symptomatic parastomal hernia, *subgroup* of 16 patients with ileal conduit

Intervention: either open relocation of mesh repair with peristomal or midline incision

Outcome: mesh related complications, recurrence, operative time, length of stay

E-mail, no response.

EXCLUSION: subgroup; no specific data available
(not matching inclusion criteria)

(9) **Author:** Faba OR, Rosales, A 2011

Title: Simplified technique for parastomal hernia repair after radical cystectomy and ileal conduit creation

Journal: Urology

Patients: patients requiring surgical repair of ileal conduit parastomal hernia, 19 patients

Intervention: ipsilateral relocation of the stoma

Outcome: operative time, length of stay, postoperative complications, recurrence

INCLUSION

(10)**Author:** Faba OR, Rosales A, 2009

Title: Post-radical cystectomy parastomal hernia repair: long-term follow-up

Journal: European Urology Supplements; *conference abstract*: 24th Annual Congress of the European Association of Urology, Stockholm, Sweden

Patients: patients requiring surgical repair of ileal conduit parastomal hernia

Intervention: 19 patients ipsilateral relocation, 9 patients local fascia repair

Outcome: postoperative complications, operative time, recurrence

EXCLUSION: duplication (e-mail authors for 9 additional patients, no response)

(11)**Author:** Fischer I, Wundsam H, 2017

Title: Parastomal hernia repair with a 3D funnel intraperitoneal mesh device and same-sided stoma relocation: results of 56 cases

Journal: World journal of surgery

Patients: patients undergoing laparoscopic repair of parastomal hernia; *subgroup* with 7 ileal conduit patients

Intervention: Laparoscopic repair with mesh

Outcome: surgical complications, recurrence and treatment thereof

E-Mail, no response

EXCLUSION: subgroup; no specific data available

(not matching inclusion criteria)

(12)**Author:** Fitzgerald MJ, Ulrich S 2018

Title: Parastomal hernia repair using the "top hat" technique - An initial experience in 30 patients at Memorial Sloan Kettering Cancer Center

Journal: American Journal of Surgery

Patients: patients undergoing top-hat repair of a parastomal hernia; *subgroup* with 22 ileal conduit patients

Intervention: open top-hat repair of parastomal hernia

Outcome: operative time, postoperative complications, recurrence

E-Mail, no response.

EXCLUSION: subgroup, no specific data available

(not matching inclusion criteria)

(13)**Author:** Franks ME, Hrebinko RL, 2001

Title: Technique of parastomal hernia repair using synthetic mesh

Journal: Urology

Patients: 6 patients with ileal conduit parastomal hernia undergoing mesh repair

Intervention: suprapertitoneal fascial closure and mesh repair

Outcome: recurrence, 'no infections', 'no stenoses'

INCLUSION

(14)**Author:** Gupta S, Rawal S, 2020

Title: Robotic intraperitoneal onlay graft hernioplasty for ileal conduit urinary diversion associated parastomal hernia

Journal: Journal of Urology; *conference abstract:* 2020 Annual Meeting of the American Urological Association. United States.

Patients: patients requiring surgical repair of ileal conduit parastomal hernia

Intervention: robotic intraperitoneal mesh repair

Outcome: postoperative complications Clavien Dindo >2, operative time, length of stay

EXCLUSION: duplication (same as Jaipura 2020)

(15)**Author:** Helal M, Austin P, 1997

Title: Evaluation and management of parastomal hernia in association with continent urinary diversion

Journal: J Urol

Patients: 22 patients with symptomatic ileal conduit parastomal hernia

Intervention: transabdominal approach with closure of fascia and reposition of stoma

Outcome: recurrence, effect on pre-operative symptoms

INCLUSION

(16)**Author:** Ho KM, Fawcett DP 2004

Title: Parastomal hernia repair using the lateral approach

Journal: BJU Int

Patients: 15 patients with symptomatic ileal conduit associated parastomal hernia

Intervention: lateral approach, closure of the defect, covered with mesh

Outcome: recurrence

INCLUSION

(17)**Author:** Hussein A, Kozlowski J 2017

Title: Revisiting the abdomen after robot-assisted radical cystectomy: Tips and tricks for robot-assisted repair

Journal: Journal of urology; *conference abstract:* 112th Annual Meeting of the American Urological Association, AUA 2017. United States.

Patients: patients undergoing robotic/open repair of late post-operative radical cystectomy complications; *subgroup* of 4 vs 2 (robotic vs open) patients for ileal conduit parastomal hernia repair

Intervention: open vs robotic repair, not specified

Outcome: failure of treatment?

E-mail, no response

EXCLUSION: conference abstract + subgroup: no additional/specific data available (not matching inclusion criteria)

(18)**Author:** Hussein A, Hashmi Z 2016

Title: Reoperations following robot-assisted radical cystectomy: A decade of experience

Journal: Journal of urology

Patients: all patients undergoing surgical intervention after robotic assisted radical cystectomy, *subgroup* of only 4 patients with parastomal hernia

Intervention: robotic-assisted mesh hernioplasty

Outcome: postoperative complications, time to operation, predictive factors of need for surgical intervention, hospital stay, blood transfusion

EXCLUSION: insufficient patient number

(19)**Author:** Jaipura J, Rawal SK 2020

Title: Robotic modified sugarbaker intraperitoneal onlay graft hernioplasty for ileal conduit urinary diversion associated with parastomal hernia

Journal: European Urology Open Science; *Conference abstract:* Urology Open Science. Conference: EAU20 Virtual Congress and Theme Week

Patients: patients requiring surgical repair of ileal conduit parastomal hernia

Intervention: robotic intraperitoneal mesh repair

Outcome: postoperative complications Clavien Dindo >2, operative time, length of stay

E-Mail, no additional data available.

EXCLUSION: conference abstract; no additional data available.

(not matching inclusion criteria)

(20)**Author:** Jeekel J, Landin S 2017

Title: Surgical treatment versus watchful waiting in patients with parastomal hernia: A retrospective cohort study

Journal: Hernia; conference abstract: 18th Annual Hernia Repair. Mexico.

Patients: patients with parastomal hernia with any kind of stoma; 6 ileal conduit patients

Intervention: surgical treatment, versus watchful waiting

Outcome: symptoms, crossover rates, recurrence, postoperative complications, ER-admission

EXCLUSION: duplication (Lambrichts 2017 and Kroese 2018)

(21)**Author:** Kotes S, Greenwell T 2018

Title: Is obstruction of ileal conduit after parastomal hernia repair with porcine derived tissue matrix Stratice TM a valid concern?

Journal: Journal of Clinical Urology; *conference abstract:* 2018 Annual Scientific Meeting of the British Association of Urological Surgeons, BAUS 2018. United Kingdom

Patients: patients with incisional or parastomal hernia after ileal conduit, *subgroup* of 23 patients with ileal conduit parastomal hernia

Intervention: open repair with lateral mesh fixation

Outcome: mesh-related complications, stoma related complications (obstruction), recurrence

E-mail, no response

EXCLUSION: conference abstract + subgroup: no additional/specific data available (not matching inclusion criteria)

(22)**Author:** Kroese LF, Lambrichts DPV, 2018

Title: Non-operative treatment as a strategy for patients with parastomal hernia: a multicentre, retrospective cohort study

Journal: Colorectal Dis

Patients: patient with parastomal hernia with any kind of stoma; just 4 ileal conduit patients within the surgery treatment group

Intervention: surgical treatment, versus watchful waiting

Outcome: symptoms, crossover rates, recurrence, postoperative complications, ER-admission

E-Mail, no response

EXCLUSION: subgroup, no specific data available.
(not matching inclusion criteria)

(23)**Author:** Lambrichts DPV, Kroese LF 2017

Title: Surgical treatment versus watchful waiting in patients with parastomal hernia: A retrospective cohort study

Journal: Hernia; conference abstract: 39th Annual International Congress of the European Hernia Society, Prevention and Prophylaxis beyond Hernia Surgery. Austria

Patients: patient with parastomal hernia with any kind of stoma; 8 ileal conduit patients

Intervention: surgical treatment, versus watchful waiting

Outcome: symptoms, crossover rates, recurrence, postoperative complications, ER-admission

EXCLUSION: duplication (Jeekel 2017 and Kroese 2018)

(24)**Author:** Lampel A, Runkel N 2012

Title: Correction of parastomal hernia using meshes

Journal: Urologe A

Patients: patients requiring surgical repair of parastomal hernia after ileal conduit, n=3

Intervention: open repair with sublay mesh placement

Outcome: recurrence

EXCLUSION: insufficient patient numbers

(25)**Author:** Marshall FF, Leadbetter WF 1975

EXCLUSION: not available online -> not matching inclusion criteria

(26)**Author:** McLemore EC, Harold KL, 2007

Title: Parastomal hernia: short-term outcome after laparoscopic and conventional repairs

Journal: Surg Innov;

Patients: all patients requiring parastomal hernia repair; *subgroup* of 17 ileal conduit patients

Intervention: open (primary suture, mesh, relocation) or laparoscopic (sugarbaker, keyhole) repair of any kind of symptomatic parastomal hernia

Outcome: postoperative complications, operative time, recurrence

EXCLUSION: duplication (subgroup), same as No 6

(27)**Author:** Miller HJ, Majumder A, 2016

Title: Retromuscular repair of parastomal hernias in the setting of ileal conduit: outcomes

and special considerations

Journal: Journal of the American college of surgeons; *conference abstract* 2nd Owen H Wangenstein Scientific Forum. United States

Patients: patients who underwent retromuscular repair of parastomal hernias of ileal conduit; 19 patients

Intervention: retromuscular repair with mesh

Outcome: postoperative complications, mesh related complications, recurrence

E-mail not available.

EXCLUSION: conference abstract; no additional data available
(not matching inclusion criteria)

(28)**Author:** Olmi S, Oldani a 2019

Title: Laparoscopic modified keyhole technique with coated polyester mesh for treatment of parastomal hernia: measures for improving the outcome

Journal: J Laparoendosc Adv Surg Tech A

Patients: patients requiring surgical repair for parastomal hernia, *subgroup* of 9 ileal conduits

Intervention: keyhole technique with parietex or physiomesh

Outcome: postoperative complications, recurrence, mesh related complications

E-Mail, no response.

EXCLUSION: subgroup; no specific data available
(not matching inclusion criteria)

(29)**Author:** Raigani S, Criss CN 2014

Title: Single-Center Experience With Parastomal Hernia Repair Using Retromuscular Mesh Placement

Journal: Journal of Gastrointestinal Journal

Patients: all patients requiring repair for parastomal hernia at a single center ; subgroup of 10 ileal conduit patients

Intervention: retromuscular approach utilizing a posterior component separation with relocation to contralateral abdominal wall

Outcome: postoperative wound complications, length of follow-up and hernia recurrence

E-Mail, no response

EXCLUSION: subgroup; no additional data available
(not matching inclusion criteria)

(30)**Author:** Rajapandian S, Jankar SV, 2020

Title: Modified laparoscopic keyhole plus repair to manage a parastomal hernia: A single-center experience.

Journal: Asian J Endosc Surg

Patients: patients with symptomatic parastomal hernia requiring repair, 3 ileal conduits

Intervention: laparoscopic modified keyhole repair

Outcome: perioperative outcomes such as operative time, hospital stay, postoperative complications, recurrence

EXCLUSION: insufficient patient numbers

(31)**Author:** Safadi 2004

Title: Laparoscopic repair of parastomal hernia: early results

Journal: Surg Endosc

Patients: patients with symptomatic parastomal hernia of any stoma, 5 ileal conduit

Intervention: laparoscopic mesh repair

Outcome: postoperative complications, recurrence, operative time

INCLUSION: patient details are given for all 5 ileal conduit patients

(32)**Author:** Sanseverino RC, Zucco F

Title: Marlex or Prolene mesh repair of parastomal hernia in a patient with Bricker urinary diversion

Patients: 4 patients undergoing parastomal hernia repair

Intervention: semicircular incision around stoma with interposition of mesh

EXCLUSION: insufficient patient numbers

(33)**Author:** Shakir A, Ghoreifi A, 2020

Title: Feasibility, technique and perioperative outcomes of robotic parastomal hernia repair with biologic mesh after cystectomy and ileal conduit diversion

Journal: Journal of urology; *conference abstract:* 2020 Annual Meeting of the American Urological Association. United States.

Patients: 7 patients undergoing robotic repair for parastomal hernia after ileal conduit urinary diversion

Intervention: robotic keyhole repair

Outcome: postoperative 90-day complications, intraoperative complications, operative time

E-Mail, no additional data available.

EXCLUSION: conference abstract; no additional data available.

(not matching inclusion criteria)

(34)**Author:** Sharma DM, Mishra V 2009

Title: Long term outcome of parastomal hernia repair in patients treated for benign urological disease.

Journal: BJU International; *conference abstract:* British Association of Urological Surgeons 2009 Annual Scientific Meeting. Glasgow United Kingdom

Patients: undergoing repair for parastomal hernia after benign indication for urinary diversion; *subgroup* 20 ileal conduit patients, 3 continent urostoma

Intervention: parastomal hernia repair, not specified

Outcome: rate of complication, recurrence

E-Mail, no response

EXCLUSION: conference abstract + subgroup; no specific/additional data available

(not matching inclusion criteria)

(35) **Author:** Tatay F, Anoro M, 2016

Title: New technique for parastomal hernia repair: "IVO technique"

Journal: Hispanoamericana de Hernia; Spanish article

Patients: patients requiring parastomal hernia repair; *subgroup* of 9 ileal conduit patients

Outcome: feasibility?

E-mail not available.

EXCLUSION: subgroup, no specific data available.

(not matching inclusion criteria)

(36) **Author:** Tran H, Turingan I, 2014

Title: Single-port laparoscopic parastomal hernia repair with modified sugarbaker technique

Journal: Journal of the Society of Laparoendoscopic surgeons

Patients: patients requiring parastomal hernia repair, *subgroup* of 4 ileal conduit repairs

Intervention: modified sugarbaker repair

Outcome: recurrence, intraoperative complications, postoperative complications, length of stay

EXCLUSION: insufficient patient numbers

(37) **Author:** Tully K, Von Bodman C 2017

Title: Evaluation of a novel three-dimensional funnel mesh for parastomal hernia repair after ileal conduit diversion

Journal: Journal of Urology; *conference abstract:* 112th Annual Meeting of the American Urological Association, AUA 2017. United States

Patients: 40 patients with clinically significant hernia after ileal conduit

Intervention: reduction of hernia sac, followed by mesh placement

Outcome: postoperative complications, recurrence

EXCLUSION: duplication (Tully 2019)

(38) **Author:** Tully KH, Roghmann F 2019

Title: Parastomal hernia repair with 3-D Mesh implants after radical cystectomy and ileal conduit urinary diversion – A single center experience using a purpose made alloplastic mesh implant

Journal: Urology

Patients: 40 patients with clinically significant hernia after ileal conduit

Intervention: reduction of hernia sac, followed by mesh placement

Outcome: postoperative complications, recurrence

INCLUSION: 40 patients undergoing repair

(39) **Author:** Velzaco C, Garvey E, 2016

Title: Laparoscopic parastomal hernia repair: a single center updated review

Journal: Hernia; *conference abstract:* 17th Annual Hernia Repair. Washington, DC United States

Patients: patients undergoing laparoscopic parastomal hernia repair at a single center; *subgroup* of 16 ileal conduit repairs

Intervention: sugarbaker/keyhole/relocation

Outcome: postoperative complications, intraoperative outcomes, recurrence

EXCLUSION: duplication (+ subgroup), same as No 6

(40)**Author:** Von Bodmann C, Brock M, 2012

Title: Parastomal hernia repair following ileal conduit urinary diversion using a novel funnel mesh implant

Journal: Journal of Urology; *conference abstract:* 2012 Annual Meeting of the American Urological Association, AUA. Atlanta, GA United States.

Patients: 13 patients with parastomal hernia after ileal conduit

Intervention: novel mesh implant specifically designed with a central penetration point and funnel for intestinal parts aiming to minimize penetration; intraperitoneal sublay

Outcome: recurrence, postoperative complications

E-Mail, no additional data available.

EXCLUSION: conference abstract; no additional data available
(not matching inclusion criteria)

(41) **Author:** Warren J, Grant A 2015

Title: Open retromuscular repair of parastomal hernias

Journal: Diseases of the colon and rectum; *conference abstract:* Annual Meeting of the American Society of Colon and Rectal Surgeons, ACSRS 2015. Boston

Patients: patients with symptomatic parastomal hernia; 11% (+7) ileal conduit

Intervention: retromuscular repair

Outcome: surgical site infection, surgical site occurrence, hernia recurrence

E-Mail, too few additional data available.

EXCLUSION: conference abstract + subgroup;
(not matching inclusion criteria)

(42)**Author:** Ypsilantis E, George M, 2015

Title: Outcome of parastomal hernia repair with a modified sugarbaker technique

Journal: colorectal disease; *conference abstract:* 10th Scientific and Annual Meeting of the European Society of Coloproctology. Dublin Ireland.

Patients: patients requiring hernia repair at a tertiary center, *subgroup* of 15 ileal conduit patients

Intervention: modified sugarbaker technique

Outcome: postoperative morbidity, recurrence

E-Mail, no response

EXCLUSION: conference abstract + subgroup; no additional/specific data available
(not matching inclusion criteria)

(43)41st Annual Congress of the European Hernia Society: Evidence, Innovation, Education;
September 11–14, 2019—Hamburg, Germany:

Author: Martin, J. A.

Title: Parostomal hernias: a more and more surgical challenge

Journal: presented at the 41st Congress of the European Hernia Society

Patients: 60 patients who underwent surgery for parastomal hernia, *subgroup* of 12 ileal conduit patients

Intervention: eventroplasty with Dynamesh IPST implant, 3D-preshaped mesh

Outcome: recurrence, safety

E-mail, no additional data available.

EXCLUSION: conference abstract + subgroup; no additional/specific data available.
(not matching inclusion criteria)

(44) 41st Annual Congress of the European Hernia Society: Evidence, Innovation, Education; September 11–14, 2019—Hamburg, Germany:

Author: Borshchigov, M., Gröger, C.

Title: Laparoscopic treatment of parastomal hernias: a single center experience with the Pauli procedure

Patients: patients requiring surgery for parastomal hernia, *subgroup* of 6 patients with urostomy

Intervention: laparoscopic Pauli procedure in 5 patients

Outcome: postoperative hospital stay and operative time, complications

E-Mail, no additional/specific data available

EXCLUSION: conference abstract + subgroup; no additional/specific data available.
(not matching inclusion criteria)

(45) American Hernia Society Annual Meeting 2020:

Author: Mäkäräinen-Uhlbäck, E., Vironen, J.

Title: Keyhole versus Sugarbaker techniques in parastomal hernia repair at bricker conduit: a retrospective nationwide cohort study with long-term follow-up

Patients: patients requiring primary repair of a ileal conduit parastomal hernia, 34 patients

Intervention: Keyhole (n=25), Sugarbaker (n=6)

Outcome: primary outcome was parastomal hernia recurrence, secondary outcomes were complication and reoperation rate

E-Mail, full article will be published in near future

EXCLUSION: conference abstract, no additional data available
(not matching inclusion criteria)