

A case of acute pancreatitis: could this be caused by dermal filler injections?

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ABSTRACT

The use of dermal fillers is increasingly common. Side effects associated with their use are usually limited to local reactions. Acute pancreatitis is also a common condition with a wide range of aetiologies. To date, no potential associations between acute pancreatitis and dermal filler injections have been reported.

A 58-year-old lady was admitted with an acute onset of epigastric pain and vomiting. She was diagnosed with acute severe pancreatitis. No cause could be found for her pancreatitis. She did, however, have dermal filler injection 24 hours previous to her initial symptoms.

Causality is difficult to prove beyond doubt in the present isolated case report. However, given the exponential rise in accessible and affordable cosmetic procedures such as dermal filler injections such case reporting is necessary to establish whether such associations truly exist and to examine underlying mechanisms.

INTRODUCTION

Cosmetic procedures utilising dermal filler injections are increasingly common. Indeed, in the US, more than 5 million dermal filler procedures were carried out in the year 2008 alone (1). Such treatments aim to reduce visible signs of aging. Hyaluronic acid is widely considered to be the gold standard of dermal fillers because of its biodegradable nature and high safety and efficacy profiles (2). It is a natural glycosaminoglycan polysaccharide found in the umbilical cord, vitreous humor and synovial fluid in the human body (3). It is currently produced on a larger scale by bacterial fermentation for the purposes of aesthetic dermatology (2).

Local complications associated with dermal fillers are generally due to a local reaction at the site of injection, sensitivity to the product injected or inappropriate placement of the product or infection (4). Systemic complications are rare and are confined to respiratory tract infections, possibly as a result of unrelated concurrent illness, as opposed to being directly caused by the dermal filler injection (5). Most dermal fillers are composed of foreign body material so immune system reactivity can occur (4). Acute pancreatitis is a common condition with a wide range of aetiologies (6). To date, no potential associations between acute pancreatitis and

dermal filler injections have been reported.

CASE REPORT

A 58-year-old lady was admitted with an acute onset of epigastric pain and vomiting. She reported no altered bowel habit or urinary symptoms, fevers or weight loss. Past medical history included a laparoscopic cholecystectomy for symptomatic gallstones, depression, body dysmorphism and a previous deep vein thrombosis. Her only regular medications were sertraline, risperidone and diazepam. She had not consumed any alcohol in the past five years. She had attended a private clinic for hyaluronic acid dermal filler injections the day previously. She had undergone these injections on 12 separate occasions over the past 5 years. Injections were administered to both lips and had not previously been associated with any adverse sequelae such as abdominal pain.

Admission bloods demonstrated an elevated white cell count of $17 \times 10^9/l$, CRP 11mg/l and an amylase of 1355U/l. Her liver function tests were all within normal parameters. She scored 3 on the Modified Glasgow Score due to her age, white cell count and a low PaO₂ on arterial blood gas. Over the next 48 hours she was managed with aggressive fluid resuscitation due to hypotension and tachycardia. An abdominal CT scan with IV contrast was performed demonstrating an oedematous pancreas and reduced enhancement, consistent with acute pancreatitis with associated inflammatory changes in the surrounding soft tissues but no evidence of intra abdominal abscess, collection or pseudocyst. Reactive bibasal pleural effusions and basal atelectasis were also demonstrated. There was no evidence of biliary tree dilatation. An MRCP examination was also undertaken demonstrating no evidence of biliary dilatation or retained stones within the biliary tree. With adequate supportive care she made a gradual improvement over the following 7 days.

DISCUSSION

We report the case of a female patient presenting with severe acute pancreatitis with a potential association with dermal filler injections. With a tee-total history and normal GGT, alcohol was not believed to be the aetiology. Furthermore gallstone related pancreatitis was unlikely given a previous laparoscopic cholecystectomy and imaging demonstrating a normal biliary tree. Although pre and post viral titres were not measured in this case, she experienced no prodromal symptoms such as loose stools which are common in cases of viral aetiology ([7](#)).

Speculation was raised as to the possibility her pancreatitis may have been secondary to the hyaluronic acid dermal fillers she received in the previous 24 hours. Pancreatitis is caused by a cascade of inflammatory mediators including TNF-alpha, IL-1?, IL-6, and IL-8 ([8](#)), which in the present case may have been initiated by a localised then systemic foreign body reaction.

Drug induced pancreatitis has also been suggested to be secondary to a build up of toxic metabolites (9). This may apply in our case, as our patient had a history of multiple dermal filler injections over the past 5 years. A total of 525 different drugs have been associated with development of acute pancreatitis, although direct causality has been proven for only 31 medications (9).

Causality is difficult to prove beyond doubt in the present isolated case report. However, given the exponential rise in accessible and affordable cosmetic procedures such as dermal filler injections such case reporting is necessary to establish whether such associations truly exist and to examine underlying mechanisms. At present there are no documented cases in the literature of pancreatitis secondary to dermal filler injection. We propose this as a potential aetiology in this case report and encourage future reporting of possible cases.

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