

Bowel injury post liposuction: Case report

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ABSTRACT

Liposuction is designed to correct the aesthetically uneven distribution of subcutaneous fat in the body. While it is one of the most commonly performed cosmetic procedures worldwide, as with any surgical intervention, liposuction has the risk of complications. These can be either local or systemic and can include visceral perforation. Post-operative complications can be under diagnosed and/or missed; therefore, the aim of this case report and literature review is to encourage physicians to have a high index of suspicion when diagnosing this complication. We report on a 38-year-old female with bowel perforation post liposuction that presented initially as an intestinal obstruction.

Keywords

Liposuction, Intestinal perforation, Bowel injury.

Introduction

Liposuction, which is one of the most commonly performed cosmetic procedures worldwide, is treated as a day case in aesthetic clinics [1]. It is designed to correct the aesthetically uneven distribution of subcutaneous fat in the body [1]. The first documentation of subcutaneous fat removal was in 1921 by Charles Dujarrier, who tried to remove subcutaneous fat from the thighs and knees of a ballerina with a curette, which ended with a femoral artery injury and subsequent limb amputation [1]. In 1964, Schrudde removed subcutaneous fat by making an incision and using a curette, which caused extensive hematoma and seroma [1,2].

As with any surgical procedure, liposuction has the risk of local and systemic complications, such as prolonged oedema, ecchymosis, skin necrosis, ulcer, hematoma, seroma, bleeding, infection, sepsis, pulmonary embolism, deep vein thrombosis and cardiac arrhythmia [3]. In the case that will be presented here, there was a small bowel injury post liposuction, which was diagnosed on the sixth post-operative day. The aim of this case report is to emphasise the importance of post-operative follow-up and remaining alert for signs of complications.

Case Report

A 38-year-old female presented to our emergency department with epigastric pain associated with nausea and vomiting for 5 days. She reported having undergone a liposuction procedure as a day case in a private aesthetic clinic six days earlier. She also reported having undergone liposuction three years previously, which had been complicated by hematoma and anaemia, as well as a caesarean section during her last pregnancy five years ago. On examination, the patient was afebrile, conscious and oriented. Her vitals were as follows: pulse 105 bpm; blood pressure 134/87 mmHg; and saturation 100%. There was tenderness in the epigastric area with ecchymosis in the upper abdomen, flanks and thighs. Bowel sounds were sluggish. The erect chest x-ray showed no free air under the diaphragm. An abdominal x-ray revealed a dilated small bowel Figure 1.

Laboratory investigations showed a normal complete blood count of $7.6 \times 10^9/L$ (normal ref. $4-11 \times 10^9/L$) with normal renal and liver function tests. The patient was admitted to the surgical ward. A computed tomography (CT) scan of the abdomen showed a massive dilated stomach, dilated loops of the jejunum and mid-jejunum transition zone and minimal fluid in the pelvis. The preliminary report impression was ileus. A nasogastric tube was inserted to relieve the gastric dilatation, and it drained 700 ml of gastric secretion. We offered the patient a diagnostic laparoscopy to rule out any visceral injury. The patient refused the diagnostic

laparoscopy due to the relief of her epigastric pain after insertion of the nasogastric tube. The patient was evaluated for 24 hours post admission. The patient was still complaining of diffuse abdominal pain, had tachycardia of 110 bpm and was afebrile. All laboratory investigations were normal. A repeated erect abdominal x-ray revealed multiple air-fluid levels. We reviewed the CT scan of the abdomen with a consulting radiologist, which resulted in a new finding of a small extra-luminal air pocket adjacent to a mid-jejunum obstruction. The final CT abdomen report was bowel perforation with minimal free air near the ileum. The patient agreed to a diagnostic laparoscopy after the radiological finding. The intra-operative findings were a small perforation in the jejunum 70 cm from the duodenal jejunum junction with pyogenic tissue and minimal bowel content. We performed a mini-laparotomy and perforated a jejunum segment resection with side-to-side anastomosis. The patient developed anastomosis insufficiency on the third post-operative day. A re-laparotomy was performed with peritoneal lavage, and ileostomy positioning was done. The post-operative recovery period was complicated with a wound infection.



Figure 1: The abdominal x-ray showed dilated small bowel with oedematous bowel wall.

Discussion

Abdominal liposuction is one of the most common aesthetic procedures performed worldwide [4]. When performed by trained medical doctors, liposuction has a mortality rate as low as 0.019% [5]. There are few case reports of intestinal perforation post liposuction [4-11], and one study reported liver perforation post abdominal liposuction and abdominoplasty [12]. The risk of intestinal perforation in liposuction procedures was reported by Bellini as 14.6% [8].

The diagnosis of bowel perforation post liposuction in our case was established on the sixth post-operative day. Zakine reported nineteen cases of bowel or internal organ injuries post liposuction [10], of which fourteen cases involved the ileum. The diagnosis of bowel perforation was established on post-operative day one in four cases, while fourteen cases were diagnosed from post-operative day two to seven and one was intra-operatively [10]. He reported that, on clinical examination, abdominal pain was noted with no frank peritonitis [10]. A picture of bowel obstruction was constant for all patients [10]. Most of the cases were diagnosed

via a CT scan. Emergency explorative laparotomy was performed following the diagnosis of bowel perforation in all cases [10]. Bowel resection was performed with temporary ileostomy to the skin in eleven cases and end-to-end anastomosis in one case [10]. Reddy reported a case of bowel perforation post liposuction on the sixth post-operative day [6]. The patient presented with severe abdominal pain and bloating along with tachycardia and fever. An erect chest x-ray showed free intra-abdominal air. An explorative laparotomy revealed multiple ileum perforations. A small bowel resection and end-to-end anastomosis were performed [6]. Telmor reported small bowel perforations post liposuction, where the patient presented on the third post-operative day with abdominal pain and constipation [13]. In that case, an erect chest x-ray was unremarkable [13], but a CT scan confirmed the diagnosis of hollow viscous perforation. Subsequently, a five-foot segment of small bowel was resected due to six enterostomies [13].

Bowel perforation is the second most lethal complication of liposuction [14]. Perforation of the ileum is the most common complication post liposuction, followed by perforation of the jejunum and spleen and to a lesser extent the transverse colon, cecum and sigmoid colon [15]. Injury to the abdominal wall and internal organs as well as bowel perforation can occur due to either blind insertion of the liposuction cannula without imaging guidance or if the insertion cannula angle is wide [14]. It also can occur due to abdominal wall defects, including herniation [14]. Small bowel perforation can be missed on simple x-rays and is better diagnosed by a CT scan [16]. The location of the perforation and air leakage will affect the amount of free air in the intra-peritoneal area [16]. Stomach and duodenum perforation create an abundance of air leakage, which can be diagnosed by a simple x-ray [16]. By contrast, small bowel perforations create much less air leakage, which can be diagnosed more frequently by CT scan than by a simple x-ray [16]. However, even in CT scans, a small bowel perforation could be difficult to diagnose due to many factors, including bowel wall oedema that occludes the perforation site, an ileus that prevents air leakage, adhesions and blood clots, which may also prevent air leakage [17].

Conclusion

Bowel perforation post liposuction often has a delayed diagnosis due to either a delayed presentation to the emergency department or a delayed referral from the aesthetic clinic. Many cases are not diagnosed until between the second and seventh post-operative day by CT scan. Surgeons must maintain a high suspicion index in diagnosing small bowel perforations. The proper treatment is an exploratory laparotomy. The timing of the diagnosis may affect the surgical intervention, which may require resection of the perforated bowel segment and bowel anastomosis either with or without bowel ostomy through the skin or simple suturing of the bowel perforation.

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