

CASE REPORT

Immunosuppressant-induced late acute pancreatitis after laparoscopic sleeve gastrectomy: a case report and literature review

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Abstract

Acute pancreatitis (AP) is a serious life-threatening condition, especially in high-risk patients. Limited data exist regarding early and late complications of immunosuppressant drugs as a cause of pancreatitis, especially Tacrolimus and Mycophenolate Mofetil (MMF), after transplantation. We report a rare case of late AP secondary to immunosuppressants' synergistic effect after 5 years of renal transplant in an obese patient on day 4 after laparoscopic sleeve gastrectomy (LSG). We present a 41-year-old Saudi obese male patient, known to have multiple comorbidities and a renal transplantation twice, was on multiple medications, including Prednisolone, MMF and Tacrolimus for 5 years. On day 4 post-LSG, he developed severe epigastric abdominal pain and was diagnosed to have AP as a late complication of immunosuppressants' synergistic effect. LSG is a common safe procedure, but complications related to medical illnesses or medications can occur. Careful review and sufficient knowledge of early and late complications are required.

INTRODUCTION

Obesity is considered one of the biggest concerns and a main cause of morbidity and mortality in the Arabian Gulf region and worldwide [1,2]. The obesity prevalence in the Gulf countries was 5–14% and 3–18% among males and females, respectively [3]. Bariatric surgery is known to cause multiple complications including acute pancreatitis (AP), which is considered a late complication after laparoscopic sleeve gastrectomy (LSG) [4]. In the literature, limited data find about pancreatitis secondary to Mycophenolate Mofetil (MMF) and Tacrolimus (Tac), which are commonly used post-transplant immunosuppressants [5,10]. This type of complication presents usually early after transplant, but, in our case, it was late presentation.

We report a rare case of AP secondary to synergistic effect of immunosuppressant medications after 5 years of renal transplant in an obese patient on day 4 post-LSG.

CASE REPORT

We present a 41-year-old Saudi male patient with a body mass index of 36.17 kg/m². He is known to have hypertension, dyslipidemia, type II diabetes mellitus, end-stage renal disease 22 years ago, and peripheral neuropathy for 5 years. He had renal transplantation twice; the second was in 2014 with no rejection on multiple medications including Prednisolone, MMF (500 mg, twice per day) and Tacrolimus (Envarsus, 1.5 mg, daily).

†IRB approval and written consent are non-applicable (only informed consent was obtained).

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The patient he admitted electively and underwent a smooth 25-minute LSG, and there was no adhesion or trauma to the pancreas. He was doing well till day 4 post-LSG. He started to complain of severe increasing epigastric pain and chest tightness. Upon physical examination, he looked uncomfortable, conscious and fully oriented with normal vital signs. Abdominal exam showed mild epigastric tenderness only. Chest X-ray and ECG were unremarkable. Labs showed normal Troponin level, liver enzymes, renal profile, C-reactive protein and alkaline phosphatase but high level of the following: leukocytosis ($15.8 \times 10^9/L$), amylase (1215 IU/L), lipase ($> 30\,000$ IU/L) and Tacrolimus level (12.8).

The patient was diagnosed with acute mild pancreatitis secondary to immunosuppressants medications. We decided only to decrease the doses and started by Tacrolimus (to 1.25 mg per day). Fortunately, we accomplished the therapeutic level of 9.8, and after discussing with the endocrine surgeon and nephrologist, we did not decrease or stop the other medications as the patient was improving gradually. Ultrasound of the abdomen was done and reported negative for gall bladder disease, normal CBD, and no intrabdominal collection. We did not do CT abdomen to decrease the risk of nephropathy and preserved it for emergencies. The patient was discharged on day 9 postoperatively after becoming pain-free, taking a full-liquid diet with normal labs.

During regular follow-up (1 week then 4 weeks postoperatively), the patient was doing well, and following the standard postoperative protocol.

DISCUSSION

Morbid obesity is a challenging case to the patient and physicians. It is well known that LSG is safe and the most common bariatric procedure worldwide. Thus, understanding and recognizing common and rare complications are a critical issue. Post-LSG complications are divided into an early complication (within 2 weeks) and a delayed complication (after 2 weeks). In the literature, pancreatitis has been rarely reported as an early complication of bariatric surgery [4].

AP is a serious life-threatening condition that should be early recognized and managed, especially in high-risk patients including post-transplant patients, particularly renal transplant which is estimated to have an incidence of 1–5% with serious risk of mortality which has been reported to range from 50 to 100% [6, 7].

AP secondary to drugs occupy in general around 5% only but their incidence is notably increasing, which is commonly linked to immune mediation [5, 6].

In the literature, Azathioprine is the only immunosuppressant drug with solid evidence of being a cause of pancreatitis, while others like Tacrolimus and MMF are not yet proven [5, 10]. Tacrolimus, which is known as Envarsus, fujimycin or FK506, is commonly used in the last 20 years as an immunosuppressant to lower the rate of rejection with a variety of adverse effects, including neurotoxicity, hepatotoxicity, nephrotoxicity and infection [9]. Junnan Xu et al. and Ogunsinde et al. are the only two case reports linked directly to Tacrolimus as a cause of early AP after renal transplant. Early AP after heart, liver, and allogeneic umbilical cord blood transplantation was linked directly to Tacrolimus as well [5, 6, 8]. MMF is a commonly used anti-rejection drug after renal transplant, especially within the initial 6 months after surgery. Bone marrow affection and gastrointestinal toxicity are the most common side effects, but severe gastrointestinal complications are rare. Long-term side

effects are not well studied. Einollahi et al. report one of the rare early cases linked directly to MMF as a cause of AP after renal transplant [9, 10].

Iku Niinomi et al. used the Japanese Adverse Drug Event Report database to point out the most frequently reported drugs to cause AP including Prednisolone (180 reports), and most importantly Tacrolimus (105 reports) [9]. They reported as well that around 40.6% of drug-induced AP was within 4 weeks after the treatment [9], but there is no data about late AP induced by immunosuppressants.

In our case, at the time onset of pancreatitis, besides Tacrolimus and MMF, only corticosteroids were reported to be the probable cause of pancreatitis which was taken with low doses. In our case, based on Mallory and Kern's established criteria to identify the association of pancreatitis with any drug, only exclusion of other causes and disappearance upon withdrawal of the drug were positive while others were not done [5].

We report a rare case of a late immunosuppressant-induced AP after 5 years of kidney transplantation in post-LSG patients, and to the best of our knowledge, it is the first case report of late immunosuppressant-induced AP.

CONCLUSION

Although LSG is a common safe procedure, events related to other conditions or medications can happen as in our case, where AP secondary to immunosuppressants can lead to reduced morbidity and mortality. Careful review of high-risk patients and knowledge are required to detect any complications or side effects related to primary disease or medications.

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None exists.

DISCLOSURE

None exists.

CONFLICTS OF INTEREST

All authors have no conflicts of interest or financial ties to disclose.

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