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Migration of an AXIOS stent complex into the colon – A case report

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ABSTRACT

INTRODUCTION: Pancreatic fluid collections are a common complication of acute pancreatitis. They are classified as acute peripancreatic fluid collections and pancreatic pseudocysts. There has been an increase in the use of endoscopic ultrasound-guided drainage stents for management of these collections. As a result, complications such as stent migration are becoming more prevalent.

PRESENTATION OF CASE: A 47-year-old male presented to the emergency department with upper abdominal pain, nausea and vomiting, and intermittent fevers. The patient had a known history of a pancreatic pseudocyst. He had undergone an endoscopic cyst-gastrostomy and placement of an AXIOS and Compass stents for drainage prior to the current presentation. The patient was investigated with a computed tomography (CT) scan that demonstrated acute pancreatitis, and migration of his AXIOS/Compass stent complex into the transverse colon. The patient was managed conservatively, and ultimately passed the stent through his bowel motions without issue. Follow up abdominal x-ray confirmed the passage of the stent.

DISCUSSION: Stent migration is a recognised complication of stent placement but is infrequently described for lumen-apposing metal stents like the AXIOS stent. The AXIOS stent has a dumbbell configuration designed to reduce the rate of migration compared to the original double-pigtail plastic stents. Despite this, stent migration still occurs, as in this case.

CONCLUSION: Complications of AXIOS stents can also include migration of the stent despite their specific design to prevent this. Conservative management is feasible rather than endoscopic retrieval and can be considered if there are no complicating features.

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1. Introduction

Pancreatic fluid collections are a common complication of acute pancreatitis. They are classified by the revised Atlanta classification as acute peripancreatic fluid collections (less than four weeks after onset of pancreatitis) and pancreatic pseudocysts (beyond four weeks) [1]. A minimally invasive approach to management of such fluid collections is becoming the mainstay of treatment [2]. With this trend, there has been an increase in the use of endoscopic ultrasound-guided drainage stents. As a result, complications from stent placement are becoming more prevalent.

We present a rare case of AXIOS stent migration that was conservatively managed. This case report has been prepared and reported in line with the SCARE guidelines [3].

2. Presentation of case

A 47-year-old male presented to the emergency department with a three-day history of worsening upper abdominal pain associated with nausea and vomiting. The patient was complaining of intermittent fevers, but no other infective symptoms. There was no change in bowel habit leading up to the presentation.

The patient had a background history of gallstone pancreatitis with a large pancreatic pseudocyst. He had undergone an endoscopic cyst-gastrostomy for drainage four weeks prior to the current presentation. A 10 × 10 mm AXIOS stent was placed across the cyst-gastrostomy, and two 5 cm Compass biliary stents were placed through it into the pseudocyst.

The patient appeared dehydrated on examination and was febrile to 38.9 degrees celsius. He was otherwise haemodynamically stable. Physical examination revealed tenderness across the upper abdomen without peritonism. Laboratory blood tests revealed raised inflammatory markers and a lipase level of 1027 U/L. The patient was investigated at the time of presentation with a computed tomography (CT) scan that demonstrated peripancreatic stranding, an overall reduction in the volume of his known pancreatic pseudocyst, and migration of his AXIOS/Compass stent complex. His stent was positioned completely within the lumen of

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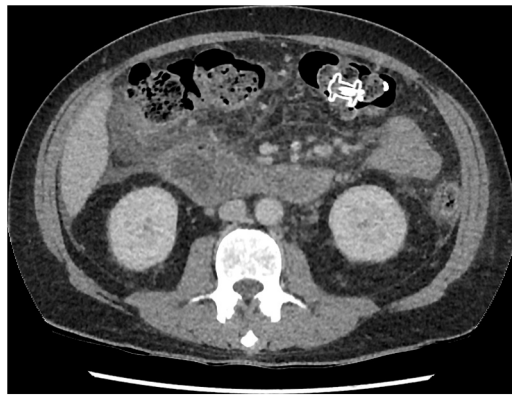


Fig. 1. An axial slice from a CT demonstrating the AXIOS stent completely within the lumen of the transverse colon.

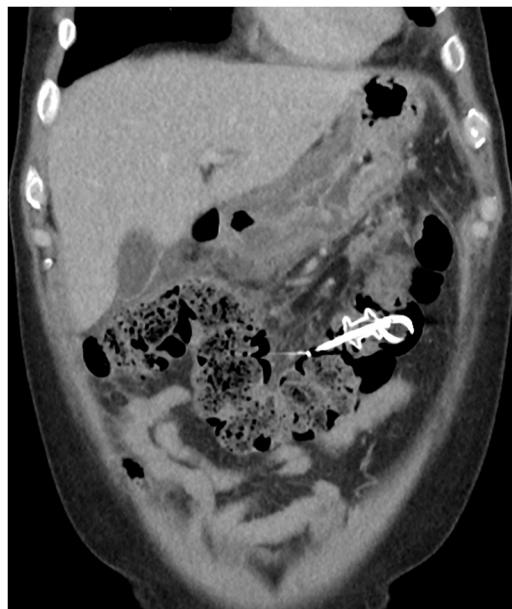


Fig. 2. A coronal slice from a CT demonstrating the AXIOS stent completely within the lumen of the transverse colon.

the transverse colon (Figs. 1 and 2). A diagnosis of acute pancreatitis and stent migration were made.

The patient was managed conservatively on the ward with intravenous fluids, analgesia and antibiotics. Given there were no complicating features on his CT scan (such as bowel perforation or obstruction), a decision was made to manage the stent migration conservatively and await passage through the colon. Ultimately the patient passed the AXIOS/Compass stent through his bowel motions without issue. Follow up abdominal x ray confirmed the passage of the stent. He was subsequently discharged home with follow up to discuss potential cholecystectomy as an outpatient.

3. Discussion

Management of pancreatic fluid collections has seen some significant changes in recent years. Historically, drainage operations (be it open or laparoscopic) were an intrinsic part of treatment; the paradigm has now shifted towards a minimally invasive approach. The general principles of management of pancreatic fluid collections are characterised by the three D's: delay, drain, debride (if required) [2]. When drainage is indicated, an endoscopic ultrasound-guided approach is becoming the mainstay of

treatment – it involves creating a fistula tract between the gastrointestinal tract (usually the stomach) and the lumen of the collection [2]. A placement of a stent across the tract is necessary to ensure ongoing drainage. A number of stent systems exist including the following: double-pigtail plastic stents, covered self-expanding metal stents, and most recently lumen-apposing metal stents.

Complications arising from stent placement vary in frequency and type depending on the type of stent placed. Stent migration is a recognised complication of stent placement but is infrequently described for lumen-apposing metal stents. The AXIOS stent is one type of lumen-apposing metal stent with a dumbbell configuration designed to reduce the rate of migration compared to the original double-pigtail plastic stents [4]. Reported rates of AXIOS stent migration come from small case series and case reports only, and vary between 1% and 6% [5–8]. A recent systematic review found 11 papers publishing their outcomes with AXIOS stents – across the studies there were only three reports of stent migration for 298 patients [4]. A further two case reports describe migration of an AXIOS stent [9,10]. In all these cases of stent migration, one migrated into the cyst cavity, one migrated into the stomach, one was dislodged at the time of endoscopic debridement, one migrated proximally into the oesophagus, and one migrated distally into the colon. In the case of migration into the colon, the stent was retrieved from the colon via flexible sigmoidoscopy [10].

4. Conclusion

Complications of lumen-apposing metallic stents (such as the AXIOS) can also include migration of the stent despite their specific design to prevent this. As demonstrated in this case, conservative management is feasible rather than endoscopic retrieval, and can be considered if there are no complicating features.

Declaration of Competing Interest

The authors report no declarations of interest.

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Ethical approval

No ethics approval was required.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author's contribution

Dr Steven Tran, MD: Writing – original draft and writing of the paper.

Dr Eu Nice Neo, MBBS, FRACS: Writing – reviewing and editing of the paper.

Registration of research studies

Not applicable.

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