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Case Report

Combination therapy of dual sclerosants with glue embolization of calcitrant pancreatico-cutaneous fistula ☆,☆☆

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ABSTRACT

We present a case of 70-year-old male who had a very difficult to treat pancreatico-cutaneous fistula following surgery which we treated with combination of silver nitrate, betadine iodine and glue. Silver nitrate and betadine acted in combination to prevent infection while also causing sclerosis of the cavity and the fistula along with the glue.

Introduction

Pancreatic fistulas are a common complication of pancreatectomies but very difficult to treat. There is no general consensus on how to treat these. Reoperation, conservative management, open drainage, and image guided percutaneous drainages have been tried for managing these [1]. We report our case of pancreatico-cutaneous fistula for which we got IRB exemption as it is a case report. We got consent from the patient to publish the case report.

Case report

A 70-year-old Caucasian male with a cecal adenocarcinoma underwent a laparoscopic right hemicolectomy. The surgery was complicated by duodenal perforation and pancreatic injury which required pyloric exclusion with Roux-en-Y duodenojejunostomy, and gastrojejunostomy. In the postoperative setting a pancreatocutaneous fistula was discovered which didn't respond to conservative management. After several months of persistence of the pancreatic fistula, the patient

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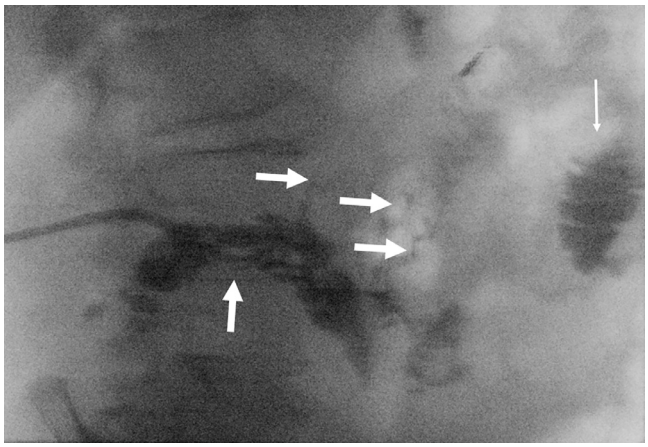

Fig. 1 – Fluoroscopic image of iodine-based contrast agent injecting into the interloop collection (thick vertical arrow) drainage catheter revealing multiple fistula (horizontal arrows) and jejunal loop (thin vertical arrow).

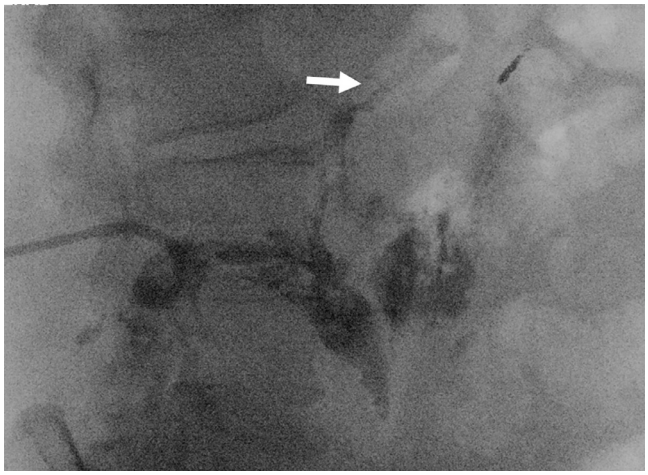

Fig. 2 – Fluoroscopic image of iodine-based contrast agent injecting into the interloop collection drainage catheter revealing faint visualization of pancreatic duct.

was referred to interventional radiology for percutaneous drainage of subcutaneous collection. Fluid aspirated at the time of drainage was found to be amylase rich. It was decided to treat the cavity with sclerotherapy by combination of silver nitrate and povidone iodine followed by embolization of the fistulous tract with n-butyl cyanoacrylate (NBCA) glue. Contrast was injected through the existing catheter to outline the inter-bowel loop collection and 3 fistulous tracts (Figs. 1 and 2). Under fluoroscopic guidance, 5 F vascular catheter was advanced into the fluid collection and the cavity was sclerosed with mixture of povidone iodine and silver nitrate and subsequently NBCA glue was used to embolize the fistulae. Patient reported decreased output for 2 days, however, the output increased back to baseline of 20-30 mL/d. The procedure of sclerotherapy and glue embolization was repeated after 2-week. While these treatments were initially beneficial, the results were not long lasting. However, due to minimal invasiveness of the procedure and some signs of success, patient wanted us to continue the treatment. A total of 11 rounds of sclerotherapy and embolizations were performed over the course of a year. Finally there was no output from the drainage catheter which was therefore removed. During the course of treatment, the patient received several rounds of treatments with octreotide injections which were discontinued later in light of the resolution of the fistula drainage. Patient has been followed clinically and has remained fistula free for last 5 years.

Discussion

This is a unique case of a persistent pancreatocutaneous fistula that occurred in the postoperative setting of a right hemicolectomy with an incidental pancreatic injury and duodenal perforation requiring multiple resections and subsequent surgeries. Amylase content in the drainage fluid is usually used to diagnose pancreatic fistula [2]. Typically, when the drainage fluid has amylase content greater than 3 times the serum amylase is considered pathognomonic for pancreatic fistula. Octreotide by reducing pancreatic exocrine secretions is traditionally been used to reduce pancreatic fistula formation following pancreatic surgery. Octreotide act to reduce the fistula formation along with promoting fistula closure if it does form [3]. Cyanoacrylate glue has shown promising result in promoting healing of the gastrocutanous fistula. Because of the calcitrant nature of the pancreatic fistula and history of the repeated history of infection of the fistula, we decided to use combination of silver nitrate and povidone iodine for sclerotherapy [4].

Glue embolization of a pancreatocutaneous fistula [5] and combination of vascular coil embolization and fibrin glue injection to successfully manage a pancreatoenteric fistula [6] exist in literature, however, we could not find combination of glue with dual sclerosant to manage a difficult to treat pancreatocutaneous fistula. One potential reason the glue embolization may be unsuccessful alone is risk of subclinical infection, therefore, we recommend combination of povidone iodine and silver nitrate to control local infection and making glue more successful.

Conclusion

Both povidone iodine and silver nitrate have properties of sclerosants along with antibacterial action and have been used in isolation for the sclerosis of abdominal cavities. Glue has also been used for embolization of the fistulas. We propose combination of all 3 for the treatment of recalcitrant enterocutaneous fistulae.

Author's contribution

Ursula des Bordes: Writing and/or revision of the manuscript, approved the final version of the manuscript, accountable for the manuscript's contents. Ashwani Kumar Sharma: Writing and/or revision of the manuscript, approved the final version of the manuscript, accountable for the manuscript's contents.

Consent for publication

For this type of study, consent for publication is not required.

Previous presentation

We declare the material was not presented at the SIR annual scientific meeting.

Patient consent

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