On-line Case Report

Duodenal polypectomy is a rare cause of acute pancreatitis

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ABSTRACT

Endoscopic duodenal polypectomy is a routine procedure particularly useful for obtaining histological diagnosis but it is not without serious complications. This is a case report of severe necrotising pancreatitis after duodenal polypectomy. We suggest that experienced endoscopists should carry out polypectomies and that clear guidelines for the management of duodenal polyps are required. Patients undergoing endoscopic duodenal polypectomies should be placed at the beginning of the endoscopy list and observed for at least 4 h.

Keywords: Acute pancreatitis – Duodenal polypectomy

Endoscopic resection of duodenal polyp is a routine procedure carried out in order to obtain histological diagnosis and as a part of management. However, polypectomies are invasive procedures and there are associated complications to consider. To date, there has been only one reported case of confirmed acute pancreatitis post endoscopic duodenal polypectomy.¹ We report a case of severe acute pancreatitis requiring pancreatic necrosectomy after duodenal polypectomy.

Case report

A 60-year-old man with known hypertension was found to have an incidental 5-mm duodenal polyp distal to the ampulla on routine endoscopy for dyspepsia. The biopsied sample was reported as containing areas of focal dysplasia. An elective endoscopic polypectomy was performed using standard diathermy wire snare. The patient was discharged home following 2 h of routine observations. At 4 h post-procedure, he presented to the

emergency department with acute abdominal pains and peritonitis. The initial erect chest X-ray excluded pneumoperitoneum and blood results revealed hyperamylasaemia (amylase of 3558 units/l).

The patient was diagnosed with acute pancreatitis and admitted for conservative management. He was provided with patient-controlled analgesia, 10 l of oxygen via mask and nasogastric suction tube, intravenous fluids and hourly urine measurements. At 24 h, the patient deteriorated and was transferred to the high dependency unit with worsening acidosis, oliguria and pyrexia. Urgent abdominal computed tomography (CT) revealed an enlarged, low-density pancreas associated with bilateral pleural effusions confirming the diagnosis of acute pancreatitis.

On day 4, the patient developed respiratory failure requiring intubation and ventilation and was transferred to intensive care unit (ICU). A nasojejunal feeding tube was inserted the following day under endoscopic guidance. The polypectomy site was clearly visualised

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Figure 1 Remains of the stalk of the polyp after snaring.

and noted to be distal and distant to the ampulla of Vater (Fig. 1). Other causes of pancreatitis were excluded; gallstones were absent on ultrasound, the patient rarely drank alcohol and triglycerides and calcium levels were normal prior to the polypectomy.

A repeat abdominal CT on day 8 revealed a necrotic pancreas associated with an 11-cm fluid collection in the lesser sac and free fluid throughout the abdomen (Fig. 2).

On day 17, the fluid was aspirated percutaneously under CT guidance and sent for culture. There were no organisms on Gram staining and no growth after 48 h. The patient deteriorated further with increased intra-abdominal pressure associated with worsening renal and cardiorespiratory function, and was taken to theatre on day 24 for a pancreatic necrosectomy. While on ICU, he was aggressively managed with inotropes, intravenous fluids, haemofiltration for renal failure, antibiotics and antifungal for persistent pyrexia. The patient died on day 62 of acute pancreatitis and multi-organ failure.

Discussion

Duodenal polyps are uncommon compared to other gastrointestinal (GI) polyps. The prevalence stated in the literature varies enormously with the highest prevalence quoted as 4.6–5% in those referred for upper GI endoscopy.^{3,4} The lesions are diverse and range from carcinomas, inflammatory fibroid polyps and lipomas.³ Biopsy followed by polypectomy is generally recommended for the rare, but significant, number of adenomatous polyps found in the descending duodenum.⁴

Duodenal polypectomies are considered to have higher complication rates compared to lower GI polypectomies;

Figure 2 CT image of abdomen showing signs of acute pancreatitis with peripancreatic collection in the lesser sac.

to date, there has been only one reported case of confirmed acute pancreatitis post endoscopic duodenal polypectomy.¹ However, in that case, the patient did not require any further surgical interventions.

In current clinical practice, it is common policy to biopsy and remove polyps in order to exclude co-existing dysplasia or hyperplasia and to prevent malignant degeneration. In our patient, the previous biopsy of the polyp had been reported as being dysplastic; therefore, following a comprehensive discussion on the management options, the patient chose to undergo an elective endoscopic polypectomy. The pedunculated polyp was on the same side and at least 2-cm distal to the ampulla and removed using standard diathermy wire snare after infiltrating the base with adrenaline.

Hyperamylasaemia without symptoms and signs of pancreatitis, post gastric and duodenal endoscopy has been documented and it is known that manipulation of the ampulla, including endoscopic retrograde cholangiopancreatography (ERCP), will cause a rise in amylase and acute pancreatitis.² There are several possible causes of pancreatitis in our case. Direct mechanical trauma causing submural haematoma and extensive oedema around the intramural bile duct as a result of manipulation of the duodenum may have resulted in transient obstruction of the bile duct. This would create comparable conditions to gallstone obstruction and cause increased pressure and reflux in the pancreatic duct with consequent rupture of the acinar cells. Vagal stimulation and cholecystokinin (CCK) release on eating immediately after the polypectomy would have increased pancreatic secretions

and contributed to further increase in pressure in the pancreatic duct. In addition, prolonged use of the endoscopic diathermy may have conducted intense heat to the adjacent pancreas and, via the intramural bile duct, up to the pancreatic acinar cells disturbing local dynamics and triggering trypsin activation. Alternatively, the injected adrenaline to raise the polyp may have similar affects to a submural haematoma and caused transient local pressure on the intramural bile duct and surrounding vasculature. The temporary vascular occlusion may have resulted in pancreatic microvascular compromise and triggered acute pancreatitis. General causes of hypotension during endoscopic polypectomy include sedation, analgesia or hypoxia and these may have also caused inadequate pancreatic perfusion and activated acute pancreatitis.

The actual cause of pancreatitis was not found in this patient and the most plausible explanation is a combination of factors contributing to activate acute pancreatitis.

There is limited literature regarding the management guidelines for duodenal polyps, in particular, dysplastic polyps. Clear guidelines on the management of duodenal polyps are required to aid clinicians managing patients with suspicious duodenal polyps. It is difficult to tell if there is presence of cancer without complete excision of

the polyp; if a definitive management is requested by the patient, the endoscopist will invariably remove the polyp but they should be fully aware of all possible complications. An experienced endoscopist should perform polypectomies and it is essential to inform the patient fully about all the management options and possible complications for duodenal polypectomies.

Arranging endoscopy list with interventional procedures at the beginning and a period of observation, we suggest 4 h, may allow early diagnosis of potential complications.

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