CASE REPORT

Endoscopic Resection of the Largest Giant Duodenal Polyp

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ABSTRACT

Giant duodenal polyp otherwise called as Brunneroma or Brunner adenoma is a rare benign tumour of the duodenum. It accounts for less than 0.008% of all the benign tumours of the gastrointestinal tract and 10.6% of the benign tumours of the duodenum [1]. Endoscopic resection of giant polyp has been performed with variable success; the largest polyp measuring 5 cm by 5 cm has been reportedly removed endoscopically. Previously a giant duodenal polyp measuring 6.5 x 4 x 2.4 cms using double endoscopic approach was removed endoscopically but patient developed perforation which required laparoscopic closure. We report the successful endoscopic resection of a giant duodenal polyp of the size of 7.2 x 4 x 3.5 cms; to the best of our knowledge this is the largest sized Brunneroma tumour removed endoscopically. (J Dig Endosc. 2012;1(1):12-15)

Keywords: Giant duodenal polyp - Endoscopic resection – Brunneroma - Perforation

Introduction

Giant duodenal polyp otherwise called as Brunneroma or Brunner Adenoma is a rare variety of benign tumours of the duodenum and accounts for less than 0.008% of the total benign tumours of the gastrointestinal tract [1] and accounts for 10.6% of the benign tumours of the duodenum [2]. The condition was first reported by Cruveilhier in 1835 [3]. The condition is most of the time diagnosed incidentally during endoscopy and accounts for 0.4% of total endoscopic diagnoses [4]. Endoscopic Resection of giant polyp was done with variable success rates and the largest size polyp removed endoscopically was between 3 cms to 5 cm [5]. Sulz et al reported removal of a giant polyp which measured 6.5 x 4 x 2.4 cms using double endoscopic approach but patient developed perforation which required laparoscopic closure [6]. We herein report the successful and safe endoscopic resection of a giant polyp of the duodenum with a size of 7.2 x 4 x 3.5 cms. With the best of our knowledge this is the largest size Brunneroma tumour removed endoscopically. The etiology, presentation, treatment options and outcome and data from the literature are discussed in this paper.

Case Report

A 41 year old woman presented with abdominal pain in the right upper quadrant, belching, nausea and bloating since 18 months. Clinically there was no lump and right hypochondrium was mildly tender. His hemogram, serum biochemistry and thyroid tests were normal. Diagnostic video Upper GI endoscopy revealed a large pedunculated polyp more than 7 cms arising from the bulb of the duodenum and traversing up to 3rd part of the duodenum (Figure 1) and routine biopsy was suggestive of benign adenomatous polyp.

CT scan abdomen was done (Figure 2) and it did not show any other polyp other than the large polyp in the duodenum. It was decided to proceed with endoscopic resection with consent for laparoscopic perforation closure if...
stalk was resected in two pieces (Figure 3). The resected specimen measured 7.2cm x 4 x 3.5cms (Figure 4). The patient had uneventful recovery and she was discharged after 48 hours of observation. The post operative biopsy report was duodenal mucosa with focal ulceration. The submucosa showed densely arranged sheets of Brunner glands with few ectatic vascular channels. Focal sub mucosal lymphoid aggregation was also seen. There was no evidence of atypia/granuloma. The HPE was suggestive of giant duodenal polyp(Figure 5).

**Discussion**

Benign tumours of duodenum are rare. Brunner gland adenomas are reported in 0.008% in autopsy specimens[1]. Brunner glands are branched acinotubular structures located in the submucosa and deeper parts of duodenal wall. They are
numerous in the proximal part of duodenum and diminish distally. The function of Brunner’s glands is secretion of alkaline mucoid material which has glycoproteins forming a protective covering for duodenum from the acid chyme reaching from stomach. Further it produces urogastrone, an inhibitor of gastric acid secretion.

The cause of Brunner gland hyperplasia is not completely understood and it behaves mostly benign except a few cases of malignant potential had been reported in literature[4]. The polyp in rare occasions may undergo dysplastic to overt malignancy but the true incidence is not known.

It is mostly diagnosed incidentally in an Upper GI endoscopy done for dyspepsia or for pain upper abdomen. It can be associated with bleeding, obstruction or can cause pancreatitis if it involves the ampullary area. The polyp may not have separate clinical presentation but may present with anemia, upper abdominal pain, melena, bloating, dyspepsia and may present like intestinal obstruction.

Endoscopic resection is favored if the lesion is around

<table>
<thead>
<tr>
<th>Author Ref no.</th>
<th>Year</th>
<th>Age &amp; sex</th>
<th>Size of Polyp</th>
<th>Method and Complication</th>
<th>Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1998</td>
<td>75yrs/Female</td>
<td>5x 7cms</td>
<td>Open surgery and No complication</td>
<td>Nil</td>
</tr>
<tr>
<td>3</td>
<td>2010</td>
<td>56yrs Female</td>
<td>5x 2.5cms</td>
<td>Laparoscopic surgery, No complication</td>
<td>Nil</td>
</tr>
<tr>
<td>4</td>
<td>2002</td>
<td>73yrs Female</td>
<td>4.5 x 2.8cms</td>
<td>Endoscopic polypectomy, No complication</td>
<td>Nil</td>
</tr>
<tr>
<td>6</td>
<td>2009</td>
<td>Not given in paper</td>
<td>6.5cms x 4cms</td>
<td>Trans oral dual endoscopic Polypectomy Resulted in iatrogenic perforation closed by laparoscopy</td>
<td>Nil</td>
</tr>
<tr>
<td>7</td>
<td>2006</td>
<td>Total no of cases 51 Duodenal-14 Ampulla-37/age 22-87yrs male and female ratio was 60:40</td>
<td>Only 7 Patients had polyps of 5cms</td>
<td>All underwent endoscopic polypectomy with APC to control the bleed with sclerotherapy and out of the seven large polyps only 3 were removed successfully. Complications were bleeding in 3 patients and pancreatitis in one.</td>
<td>Surveillance scopy after 1 month was performed. Advised annual scopy for surveillance</td>
</tr>
<tr>
<td>8</td>
<td>2009</td>
<td>81yrs Female</td>
<td>9 x 3.5 cms</td>
<td>Laparotomy No complication</td>
<td>Nil</td>
</tr>
<tr>
<td>9</td>
<td>2011</td>
<td>65 yrs Female</td>
<td>6 x 5 cms</td>
<td>Laparotomy-trans-duodenal polypectomy, No complication</td>
<td>2 years - no problem</td>
</tr>
<tr>
<td>10</td>
<td>2003</td>
<td>79 yrs Male</td>
<td>2 cms</td>
<td>Endoscopic resection-dysplasia</td>
<td>Nil</td>
</tr>
</tbody>
</table>
4–5cms in size and beyond which surgery–open or laproscopic – has been favoured [6]. A case of giant duodenal polyp using double endoscopic method was employed to remove the large polyp [6]. Because authors used two scopes and operating both synergistically was difficult and then they pulled the polyp in to the gastric antrum to perform the resection and it resulted in large deep tear in the duodenum which required laproscopic closure; in view of wide tear endoclipping was not feasible. In our case the polyp was sclerosed with aethoxysclerol-adrenaline mixture and the polyp was resected with Jumbo snare within duodenum using single scope. So it was feasible to perform polypectomy without iatrogenic perforation. In our case also we were ready to perform laparoscopic suturing in the event of perforation since the polyp was large, polypectomy site was in the acute angle near the bulb of duodenum more in the posterior wall and application of clips at that site would have been technically very difficult.

In our case we did sclerotherapy in the base with aethoxysclerol with 1:10000 adrenaline to raise the mucosa and also to prevent bleeding after snare polypectomy. This is mild deviation from standard guidelines [7], aethoxysclerol was added to prevent inadvertent bleed since it was giant polyp. Some other authors have resected giant polyps 6cm to 9 cm in size by open or laproscopic surgery [2,8-10]. All these are summarized in Table 1. To our knowledge our case is the first in the English Literature in which largest polyp of 7.2cms x 4x 3.5cms was removed successfully by primary endoscopic method with single scope and without any morbidity.

Conclusion

The rare tumour of giant duodenal polyp is amenable for endoscopic resection in the skilled hands and it should be the method of choice and always keep laproscopic / open surgical unit as stand by in case inadvertent perforation ensues. With the published literature, we safely and successfully resected the largest size Brunneroma or giant duodenal polyp by primary endoscopic method with single scope.

References


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