Endoscopic Resection of a Giant Laterally Spreading Papillary Adenoma

M Bourke and R Sonson, Westmead Hospital, Sydney, NSW, Australia

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Abstract

Endoscopic ampullectomy is established as a minimally invasive therapy for treating lesions of the ampulla of Vater. It is generally safe and highly effective for treatment of papillary adenoma. A subgroup of patients have larger laterally spreading adenomas that may extend for more than 50% of the circumference of the duodenum. These can also be managed endoscopically by a combination of endoscopic mucosal resection and ampullectomy, although the risk of complications is greater, particularly postprocedural bleeding. Here the authors present the techniques involved in the removal of large laterally spreading ampullary adenomas. This article is part of an expert video encyclopedia.

Keywords

Ampullary adenoma; Ampullectomy; Standard endoscopy; Video.

Video Related to this Article

Video available to view or download at doi:10.1016/S2212-0971(13)70202-4

Materials

- Submucosal injection fluid, either normal saline or a colloidal solution such as succinylated gelatin (Gelofusine), in combination with epinephrine, diluted to a final concentration of 1:100 000. Indigo carmine 8 mg 500 ml−1 is added to this solution, yielding a final concentration of 0.04%.
- Twenty-five gauge injectors (Olympus Corporation, Tokyo, Japan).
- A range of snares including 20-mm spiral snare (Olympus Corporation, Tokyo, Japan), 10- and 15-mm mini oval and hexagonal snares (Cook Medical, Browns Plains, Brisbane, Australia).
- Triple-lumen sphincterotomes (Olympus Corporation, Tokyo, Japan).
- 0.035-in. guidewires.
- Plastic biliary (7 and 10 Fr.) and pancreatic (5 Fr. single pigtail) endoprosthesis and pancreatic (Cook Medical, Browns Plains, Brisbane, Australia).
- Microprocessor-controlled generator delivering short bursts of cutting current interspersed between longer intervals of more prolonged coagulation current (e.g., ERBE VIO 300, ERBE Elektromedizin GmbH, Tubingen, Germany; or Olympus ESG-100, Olympus Corporation, Tokyo, Japan).

Background and Endoscopic Procedure

A 65-year-old woman underwent endoscopy for investigation of iron deficiency anemia and a large laterally spreading ampullary adenoma was found. The authors referred her to their service for further investigation and treatment. Side-viewing duodenoscopy confirmed a more than hemicircumferential flat lesion with Paris 0-IIa morphology and a granular surface encircling the papilla. There was no ulceration or fixity and the lesion was soft. Computed tomography (CT) scan showed thickening of the duodenal wall but no regional lymphadenopathy, and magnetic resonance cholangiopancreatography (MRCP) showed dilated pancreatic, and biliary ducts but no apparent intraductal extension. The patient was treated with wide-filled duodenal endoscopic mucosal resection and ampullectomy with biductal sphincterotomies with stents to both biliary and pancreatic ducts as shown in the accompanying video. The patient was monitored for 3 days. There was minor malena, but no further intervention or blood transfusion was required.

Key Learning Points/Tips and Tricks

- Careful preprocedural staging is required including endoscopic assessment, CT, and MRCP.
- With extensive lesions, endoscopic resection of the lateral components to isolate the papilla is helpful.
- The papilla should be resected in a single piece.
- Pancreatic stenting is mandatory.
- Postprocedural bleeding is very common and needs to be factored into the process of therapeutic decision making.

Scripted Voiceover

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<td>This large laterally spreading papillary adenoma occupies more than 50% of the circumference. Preprocedural staging includes MRCP and CT scanning to assess for intraductal extension and regional lymphadenopathy.</td>
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After careful endoscopic assessment, the lateral components are excised by conventional endoscopic mucosal resection. Dilute indigo-carmine dye is used in the submucosal injection fluid. Its benefits are three fold. It is avid for the loose areolar connective tissue of the submucosa and thus helps to confirm that the resection is taking place in the correct tissue plane. In addition, the dye helps to define the margins of the lesion and delineate the extent of the submucosal cushion. Great care is taken with snare placement, aligning each sequential excision with the edge of the advancing mucosal defect. A margin of normal tissue is also excised. Careful technique avoids mucosal islands, which are difficult to excise subsequently.

Most of the extra papillary adenoma has now been removed. Now the suprapapillary component of the neoplasm is excised. The muscle layer of the papilla is exposed and the papilla is isolated. Papillectomy can now be performed.

The fulcrum technique is used for snare placement. The tip of the snare is impacted above the papilla and slightly to the right. It is then splayed open around the papilla as the scope is gently pushed inferiorly.

The snare is closed maximally, the elevator on the duodenoscope opened completely to ensure complete retraction of the snare wire within the sheath, and then the base of the papilla is divided with continuous Endocut current. The specimen is immediately retrieved for histology.

The first priority is to place a pancreatic stent. Level-one evidence confirms that pancreatic stenting reduces the risk of postpapillectomy pancreatitis. The pancreatic orifice is usually found in the 11 o’clock position within the papillectomy bed. The patient will remain in hospital for at least 48 h. The main postprocedural complication is bleeding and the risk is greatest in the first few days. Low-grade melena occurs in about 50% of cases and is usually self-limiting. We usually do not intervene unless hypotension develops. Endoscopic hemostasis in the thin-walled, richly vascularized duodenum is potentially dangerous in the first few days after extensive resection and is only moderately effective.

Further Reading

Hopper, A. D.; Bourke, M. J.; Williams, S. J.; Swan, M. Giant Laterally Spreading Tumours of the Papilla: Endoscopic Features, Resection Technique and Outcome. Gastrointest. Endosc. 2010, 71(6), 967–975.