Transluminal removal of a giant fibrovascular polyp of the esophagus

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Abstract

Giant fibrovascular polyps of the esophagus are rare benign tumors that originate at the hypopharynx or the upper third of the esophagus. Because of the indolent and benign nature they are mostly discovered when very large with symptoms like dysphagia or regurgitation of the polyp into the mouth which can cause asphyxia and dead. The removal of these polyps is obligatory. Although more than 100 cases of giant fibrovascular esophageal polyps have been described in literature so far, the approach for removal is not yet standard and needs a customized use of medical technology from different disciplines. We present the case of a 42 year old man in whom a giant polyp was removed transorally by a combination of instruments and materials from different disciplines (gastroenterological, surgical and laryngological).

Key words : giant polyp ; transluminal ; oral; esophagus.

Introduction

Giant esophageal polyps are rare benign tumors that arise from the upper third part of the esophagus or, more rarely, from the hypopharynx. Although mostly benign they should be removed due to possible lethal complications such as bleeding, asphyxiation following regurgitation of the polyp into the laryngeal airway and the rare risk of malignant transformation. Although more than 100 cases of such giant fibrovascular polyps have been published in literature, in daily practice they stay an infrequent entity. There is no standard technique for removal and the reports about technical difficulties and troublesome time consuming procedures are no exception. The former open surgical thoracotomy and esophagotomy is more and more abandoned and replaced by the transoral route, independently of the size of the tumor. Furthermore, pre-operative evaluation is becoming more accurate thanks to more performant CT/MRI scans and 3-dimensional reconstructions.

We illustrate this in the following case report and short review of the literature.

Case report

A 42 year old man presented with pyrosis and dysphagia for bread and pasta. His history was unremarkable except for a well-treated arterial hypertension. An upper gastrointestinal (GI) endoscopy was performed which showed a reflux LA grade 2 and the impression of a giant polyp in the esophagus (Figure 1). The polyp occupied the esophageal lumen completely at the distal part and

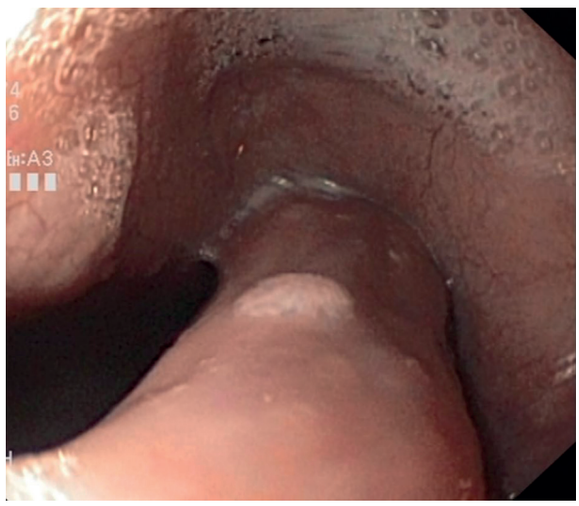

Figure 1.

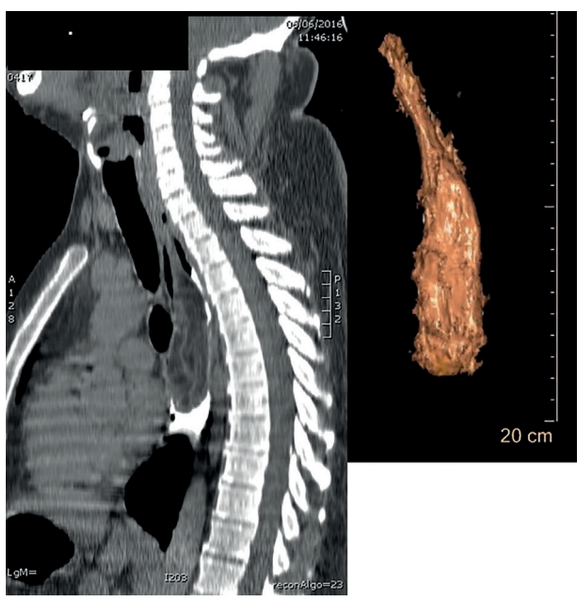

Figure 2.

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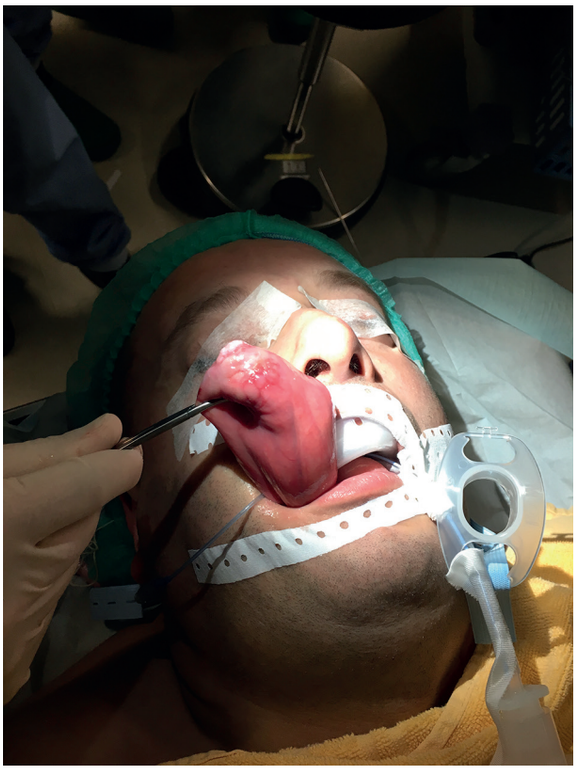

Figure 3.

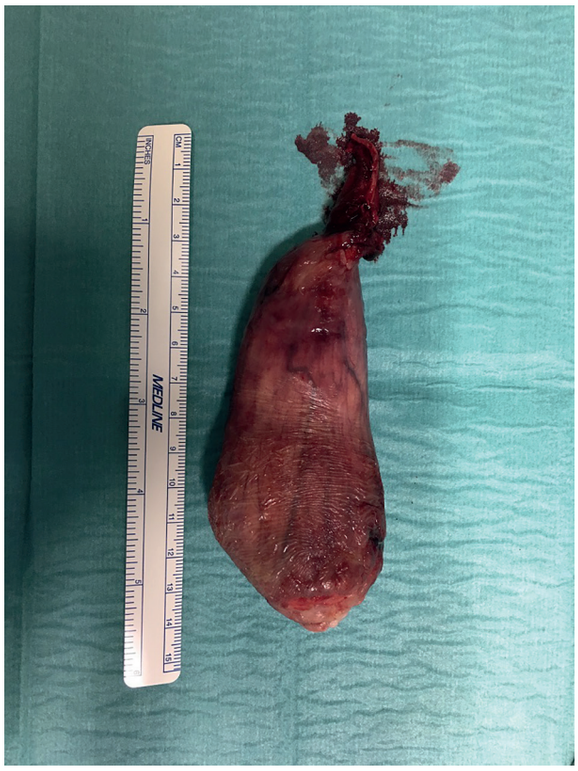

Figure 4.

made correct evaluation difficult. Further work up with CT scan with 3D reconstruction showed a giant polyp, arising from the upper part of the esophagus with a length of 17 and width of 5 cm (Figure 2). Further anamnesis revealed that the first symptoms occurred about 1 year earlier with occasional regurgitation of a small polyp into the mouth. The patient thought at that moment he had problems with his uvula.

The patient was discussed multidisciplinary. After intubation, an upper GI endoscopy was performed with an attempt to capture the polyp with a polypectomy snare or crocodile forceps which failed. Inversion of the polyp with extraction of the distal end of polyp trough the mouth succeeded by using a rigid pneumaticoptical esophagoscope based on the Roberts-Jesberg model (Richard Wolf Company, Germany) (Figure 3). This rigid esophagoscope has distal and proximal illumination from an integrated cold light system and air connection. It has a width of 8x12 mm and a length of 450 mm and can be sealed proximally by a cap with window. By double bellows with Luer connector the esophagus can be filled with air. After entering the esophagus the polyp could be identified. By slowly progressing under air insufflation via the double bellows the polyp was tracked over the whole length till the end of the polyp became visible. Moving around the tip of the esophagoscope permitted good evaluation of the distal polyp end which could then be grasped with a foreign body forceps with alligator jaws. The polyp was drawn back in one step by redrawing the esophagoscope together with the forceps holding the polyp while insufflating air into the esophagus to facilitate the passage of the polyp. The rigid esophagoscope was then replaced by a dilating laryngoscope (by Pototschnig, Richard Wolf Company, Germany) with a length of 183 mm and a width of 32 mm. Spreading the blades exposed the base of the polyp and permitted dilatations of the esophagus, making it possible to introduce a linear stapler (Endo GIA™ 30 mm Curved Tip Articulating Vascular/Medium Reload with Tri-Staple™ Technology, Medtronics Covidien, USA) for resection of the polyp as close as possible to its base. The correct placement of the vascular stapler took some time to avoid stapling the wall of the esophagus. A small stalk left behind was easily removed by upper GI flexible endoscopy using an endoloop and snare. No complications occurred besides a sore throat for a couple of days. The patient could leave the hospital the next day. An upper GI endoscopy one month later showed the resection margin at the cricophagyngeus. The patient had no dysphagia any more. Figure 4 shows the resected polyp.

Discussion

Fibrovascular polyps of the esophagus are generally benign disorders. In literature various terms are used, such as fibroepithelial polyps, fibroma, fibrolipoma or fibromixoma of the esophagus. Histologically, all entities have the same properties: they contain fibrous tissue with vascular components and variable amounts of

myxoid and adipose tissues. By definition of the World Health Organization they are now consistently called fibrovascular polyps (1).

The majority of cases become symptomatic due to the size of the polyp. They typically start as small mucosal tumors at the level of the pharyngo-esophageal junction, more specifically at a Laimer-Haeckmann triangle, where also the Zenker diverticulum has its origin. In this area the submucosal tissue is more loose and redundant with less muscular support. It is hypothesized that this allows the mucosa to be pulled along due to the constant downward thrust of the peristalsis of the esophagus and the swallowing (1). The result is a slow growing pedunculated tumor that can reach the cardia and even prolapse into the stomach (so called giant fibrovascular polyps (2,3). The time for such a polyp to grow is unknown but in patients in whom the polyp recurred, the polyp took 2 years to grow to a length of about 6 cm (1). In our patient a small tumor seemed to be present one year earlier.

The most frequent symptoms are dysphagia, regurgitation of the polyp into the mouth or bleeding. In rare cases death by asphyxia can occur when the polyp obstructs the entrance of the larynx (4). Other non-specific symptoms are anemia, retrosternal pain, weight loss, odynophagia, pyrosis and abdominal pain (5). Malignant transformation has been published but seems extremely rare (4).

Flexible upper GI endoscopy can miss the diagnosis because the surface of the polyp can be indistinguishable from the normal esophageal mucosa. When "giant" the endoscopist only will notice a smaller lumen of the esophagus without mucosal abnormalities. Furthermore, the origin of the polyp is at the upper cricopharyngeus, a difficult area in flexible endoscopy and better visualized with a rigid pneumaticoptical esophagoscope. A barium swallow will show a large, smooth, sausage-shaped intraluminal defect from the upper esophagus to the level of the length of the polyp. However the diagnosis can also be missed when these polyps are pressed against the esophageal wall, giving a false impression of a normal barium swallow. Nowadays, diagnosis with better evaluation of size is becoming more accurate with MRI and CT scan with 3-dimensional reconstructions permitting additional information about the spacial dimensions, length, width and feeding vessels of the polyp (6).

Reports of giant polyps in literature are found already in 1952 (7). The standard approach was by open surgical thoracotomy and esophagotomy. When the transoral approach was introduced, it was initially only used for smaller tumors but is now used regardless of the size of the polyp (8,9,10). Resection by flexible endoscopy alone is sometimes possible but in most cases the polyps are too big for the existing endoscopic loops so that a combination of surgical, endoscopic and otolaryngological material is useful.

The main risk during resection is bleeding. Anatomo-pathological findings comprise a vascular component containing arteries, large number of prominent open capillaries and small veins (11). Some advocate that external surgery should be preferred in cases where CT or MRI scan give evidence of major feeding vessel (6). Nevertheless, to our knowledge, independently of the technique used for removal, no major bleeding was reported in the published literature.

Recurrence risk is unknown since follow-up is not always mentioned or is short (one year). In the published cases recurrence occurred between 2 and 5 years after resection (1,12,13).

In our case, a giant 14 cm long and 6 cm width polyp was successfully removed by the transoral route, using a combination of surgical, otolaryngological and endoscopic instruments and material. No complication was observed and the patient left the hospital the next day. An endoscopy one year later showed no recurrence .

In summary, giant fibrovascular polyps are rare esophageal tumors that must be removed due to possible complications that can even be lethal. Removal can be challenging but is save and feasible by transoral route in most cases. Adequate pre-operative investigations including CT and MRI with 3D-reconstruction allow identification of the pedicle's origin, the bulk of the polyp and vascular structures.

References

1. LEE S.Y., CHAN W.H., SIVANANDAN R., LIM D.T., WONG W.K. Recurrent giant fibrovascular polyp of the esophagus. *World J. Gastroenterol.,* 2009, **15** : 3697-700.
2. PATEL J., KIEFFER R.W., MARTIN M., AVANT G.R. Giant fibrovascular polyp of the esophagus. *Gastroenterology,* 1984, **87** : 953-956.
3. I.H., KIM J.S., SHIM Y.M. Giant fibrovascular polyp of the hypopharynx: surgical treatment with the biappoach. *J. Korean Med. Sci.,* 2006, **21** : 749-751.
4. SARGENT R.L., HOOD I.C. Asphyxiation caused by giant fibrovascular polyp of the esophagus. *Arch. pathol. lab. med.,* 2006, **130** : 725-727.
5. PALLABAZZER G., SANTI S., BIAGIO S., D'IMPORZANO S. Difficult polypectomie-giant hypopharyngeal polyp: case report and literature review. *World J. Gastroenterol.,* 2013, **19** : 5936-5939.
6. KIM T.S., SONG S.Y., HAN J., SHIM Y.M., JEONG H.S. Giant fibrovascular polyp of the esophagus: CT findings. *Abdom. Imaging,* 2005, **30** : 653-655.
7. BERTIRI A. Giant polyp of the esophagus. *Chir. Ital.*, 1952, **6** : 331-336.
8. BURDICK J.S., SEIDEL R., LINDBERG G. Endoscopic removal of an esophageal fibrovascular polyp. *Endoscopy,* 1999, **31** : 401-404.
9. LI J., HUA Y.H., RENFU P.R., ZHONGSHENG L.Z. Gastroscopic removal of a giant fibrovascular polyp from the esophagus. *Thoracic Cancer,* 2016, **7** : 363-366.
10. OKA M., UEHA R., NITO T., YAMASOBA T. Giant fibrovascular polyp in the hypopharynx: a case report and review of the literature. *SpringerPlus,* 2016, **5** : 1443.
11. PACZONA R., IVAN L., JORI J., IVANY B. Peroral Endoscopic Removal of a Regurgitated Giant Polisegmented fibrovascular Polyp of the Esophagus. *Diagn. Ther. Endosc.,* 2001, **7** : 197-201.
12. DRENTH J., WOBBES T., BONENKAMP J.J., NAGENGAST F.M. Recurrent esophageal fibrovascular polyps: case history and review of the literature. *Dig. Dis. Sci.*, 2002, **47** : 2598-604.
13. COCKBAIN A.J., ENGLAND R., DEXTER S.P.L., SARELA A.I. Surveillance is important after surgical excision of giant fibrovascular polyps of the esophagus. *Ann. Thorac. Surg.*, 2017, **104** : e341-e343.