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Case Report

Endoscopic Esophageal Polypectomy of a Giant Fibrovascular Polyp: Case Report and Literature Review

Suphawat Laohawiriyakamol, MD
Nan-ak Wiboonkhwan, MD
Tortrakoon Thongkan, MD
Worawit Wanitsuwan, MD
Siripong Cheewatanakornkul, MD
Puttisak Puttawibul, MD
Division of General Surgery, Department of Surgery, Faculty of Medicine, Songklanagarind Hospital, Prince of Songkla University

Abstract ***Background:*** **Giant fibrovascular polyps of the esophagus are rare tumors. They are usually located in the upper third of the esophagus. Symptoms include dysphagia and regurgitation of the mass into the oral cavity, which can cause airway obstruction, secondary to mechanical pressure on the larynx.**

We present a 34-year-old male patient with a 10-month history of gradually intermittent dysphagia and regurgitating mass into the mouth without syncope, airway obstruction, weight loss, melena and hematemesis. After diagnosis of a giant fibrovascular polyp of the esophagus, endoscopic polypectomy was performed. Histopathological examination revealed a fibrovascular polyp. Esophagoscopy at 2 years after excision showed no mass or symptom recurrence. The literatures regarding giant esophageal polyp were reviewed.

Keywords: **Dysphagia, esophageal polyp, endoscopic polypectomy, fibrovascular polyp**

Introduction

Giant pedunculated esophageal polyps are very rare benign neoplasm. Moersch and Harrington discovered that 44 (0.59%) benign esophageal tumors were identified in 7,459 consecutive autopsies at the Mayo Clinic[1]. Amongst benign esophageal tumors, only 0.03% were giant fibrovascular polyps[2]. They are more frequent in males (male:female ratio = 3:1)[3]. Average age at diagnosis was 54 years with a range of 19 months to 88 years.

Location

About 85% of polyps are located in the upper third of the esophagus, close to the upper esophageal sphincter, and originate as small mucosal or submucosaltumors, extending into the esophageal lumen due to peristalsis which then become pedunculated polyps. The peristaltic activity from the esophagus through constant traction, over the years, leads to the growth of this lesion[4,5].

Clinical manifestation

Sixty-two percent of the patients were presented with dysphagia which was the most frequently symptom. The dysphagia was usually progressive, starting with solids and then advancing to liquids. The second most

Correspondence address: *Suphawat Laohawiriyakamol, MD; Division of General Surgery, Department of Surgery, Faculty of Medicine, Songklanagarind Hospital, Prince of Songkla University, Hat Yai, Songkhla 90110, Thailand; Telephone:+ 66-7445-1401; Email: putpnu@hotmail.com*

common symptom was regurgitation of the mass into the mouth, which occurred in 38% of the patients. Other symptoms were a lump in the throat, weight loss, regurgitated of food, chest pain, coughing, odynophagia, sore throat, vomiting, abdominal pain, melena and asphyxiation, which results from impaction of the polyp in the glottis. This is the most dreadful complication[4-6].

Diagnostic evaluation

Barium studies are commonly used[5,6]. However, they have a low sensitivity to demonstrate the pedicle lesion[7]. Endoscopy is helpful in visualization of polypoid mass originated at upper esophagus, but it was found that 22% of initial barium studies along with 33% of initial endoscopic examinations failed to identify the presence of polyps[4]. An endoscopic ultrasound may be useful as an adjunct imaging examination since it provides information about the size and origin of the lesion on the vascularization of the polyps[8]. CT scanning and an MRI are more accurate in evaluating these lesions, which may be useful both for diagnosis as well as for surgical planning[9].

Histologic examination of resected polyps

Histologic examinations revealed a variety of cell types. 34% are fibrovascular, 21% are fibroma, 17% are lipomas, 11% are fibrolipomas whilst others are hamartoma, schwannoma, giant cell tumor, epithelioma[4]. Fibrovascular polyps are covered with normal mucosa and containing amounts of fibrous, vascular and adipose tissue therefore, these polypoid lesions have been termed as lipomas, fibromas, fibrolipomas, or fibroepithelial polyps in the literature. The World Health Organization has classified them as fibrovascular polyps. Malignant transformation is rare, but has been reported in esophageal polyps as the lipomatous components can undergo sarcomatous changes. The squamous mucosa can develop into squamous cell carcinoma, while small polyps can develop into adenocarcinoma[10-12].

Treatment

Giant fibrovascular polyps should be removed surgically as soon as possible after confirmation of diagnosis depending on the risk of airway obstruction. Current treatment for this complication includes resection through cervical incision, thoracotomy or endoscopic approach. If the stalk can be visualized endoscopically, endoscopic resection can be performed[13-17]. Use of a detachable snare loop, or stapling device allows good vascular control for achievement of hemostasis which is the most important key of treatment due to hypervascularity at stalk.

In one case, ablation of the polyp was achieved by endoscopic YAG laser vaporization[18]. However, in many other cases, surgical excision is required because of poor visualization, site of attachment of the stalk, or impending airway obstruction[18]. Nonoperative management of these lesions is of historical interest only and should be avoided.

A Case Report

A 34-year-old Thai male patient presented with a 10-month history of gradually intermittent dysphagia and regurgitated mass into the mouth without weight loss, melena nor hematemesis. He had no other medical conditions. The physical examination revealed a 5x2 cm mass in the mouth provoked by coughing with its disappearance on swallowing. No other abnormality was detected during the physical examination.

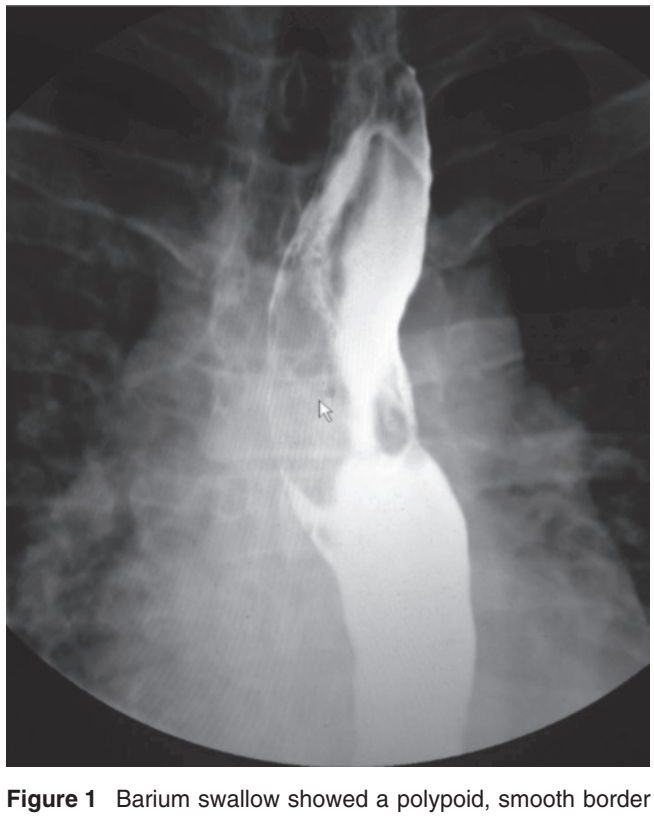

Figure 1 Barium swallow showed a polypoid, smooth border with a filling defect originating from the cervical esophagus.

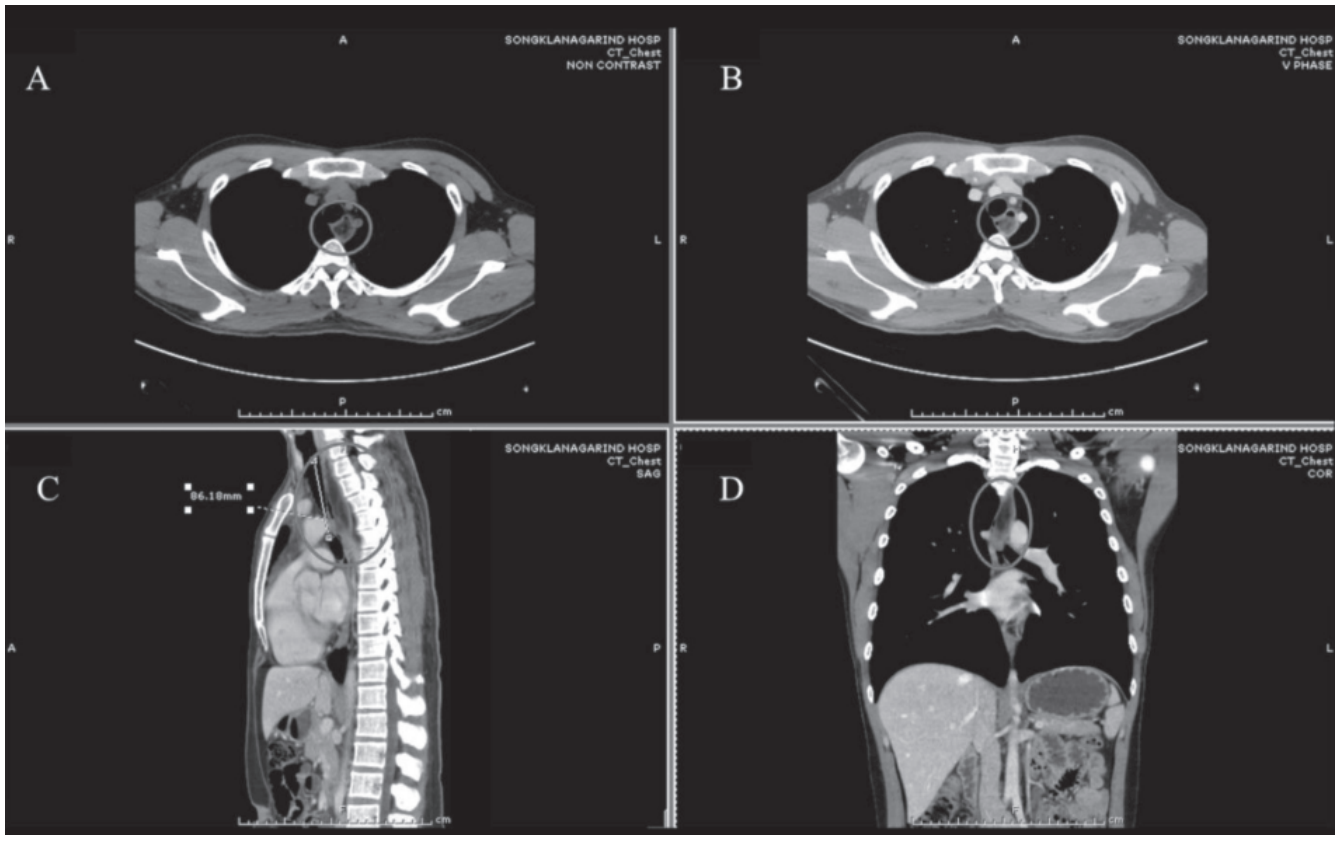

Figure 2 Chest CT scan demonstrated well-defined, tubular shaped lesion at the proximal esophageal lumen.

Radiologic examination with barium swallow showed a polypoid, smooth border, filling defect originating from the cervical esophagus, about C7 level, caused moderate luminal narrowing without obstruction (Figure 1). The thoracic computerized tomographic scan demonstrated a well-defined tubular fatty lesion within the proximal esophageal lumen, measuring about 1.6 cm in diameter and 8.6 cm in length (Figure 2).

The flexible esophagoscopy showed a pedunculated smooth surface mass, 8 cm in length, arising from the upper esophageal sphincter and extending down into middle esophagus. No specific abnormality was detected in the stomach and proximal duodenum (Figure 3).

The diagnosis of fibrovascular polyp was made from radio-graphically examination, and confirmed by endoscopic biopsy. Laboratory investigations and a chest radiograph were within normal limits. An endoscopic esophageal polypectomy was selected.

The patient was taken to the operating room for a planned polypectomy under general anesthesia.

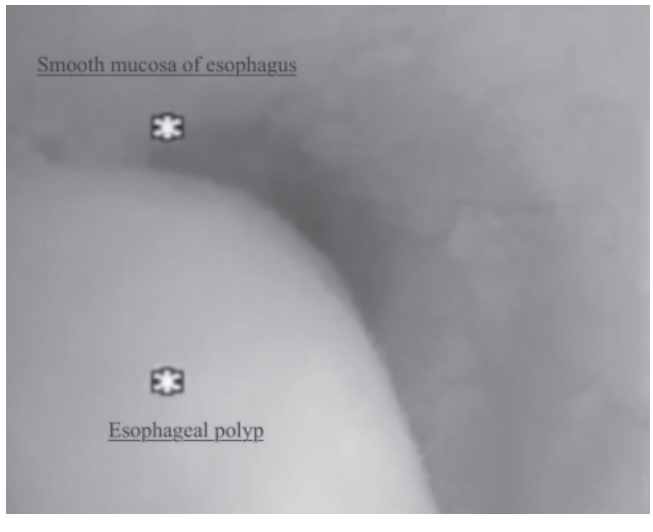

Figure 3 Flexible esophagoscopy showed pedunculated mass arising from the upper esophageal sphincter.

Flexible esophagoscope was performed first, which revealed a polyp as previous described. The distal end of the polyp was then extracted by grasping the polyp and retracted through the oral cavity (Figure 4).

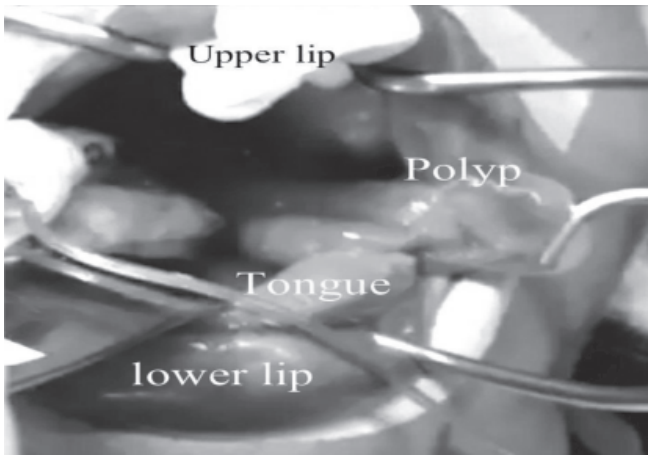

Figure 4 Distal portion of polyp extracted from mouth while still attached to the cervical esophagus

Endoscopic mechanical hemostasis was achieved with the tightening of a rubber stopper to tamponade any feeder vessels in the polyp stalk by a detachable snare loop (Endoloop, Olympus, Tokyo, Japan) (Figure 5A, 5B). Placement of a diathermy snare above endoloop following hot snare polypectomy (ICC 200, Erbe, Tubingen, Germany) (Figure 5C, 5D). The esophageal lumen was then inspected, and was found to be free from bleeding, mucosal tears, or perforation. The polyp was approximately 7 cm in size (Figure 6).

Liquid diet was begun postoperatively on the day of surgery. On the next day, the patient was advanced to regular diet. The patient recovered uneventfully and was cured of his dysphagia.

Histopathological examination demonstrated a benign appearing fibrovascular proliferation, and the overlying epithelium showed no evidence of morphologic atypia, mitotic figures, nor features of malignancy. The lesion was consistent with a fibrovascular polyp.

The patient was followed up for more than two years with esophagoscopy, which revealed no

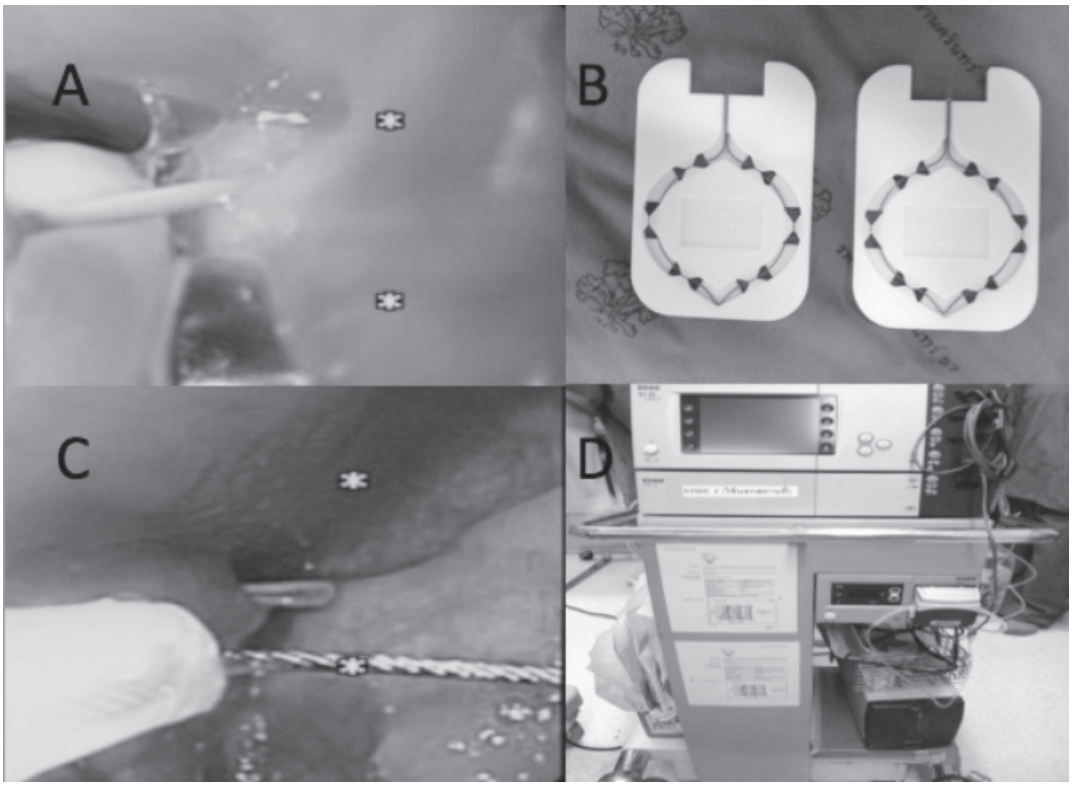

Figure 5 A.Placement of Endoloop around polyp stalk then tightening of rubber stopper to tamponade any feeder vessels in the polyp stalk B. Endoloop (Olympus, Tokyo, Japan) C. Placement of diathermy snare above endoloop following by a hot snare polypectomy D. Diathermy snare (ICC 200, Erbe, Tubingen, Germany)

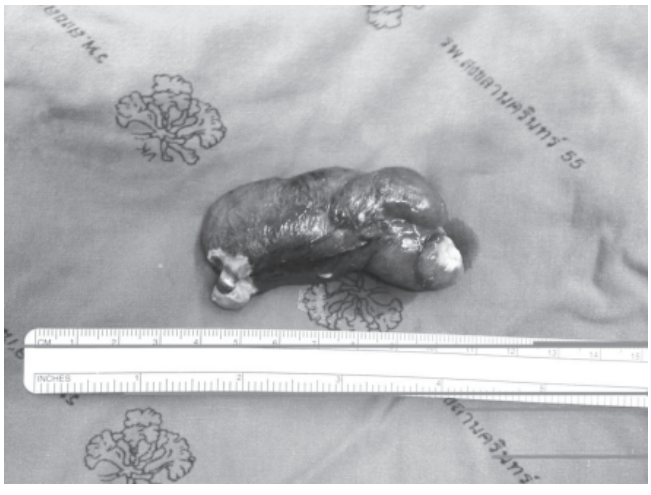

Figure 6 Gross surgical specimen of the fibrovascular polyp.

recurrence.

Discussion

Giant fibrovascular polyp is a rare entity with few cases reported in the literature. It is a benign intraluminal tumor of esophagus consisting of fibrous and lipomatous components with hypervascularity. The redundant submucosal folds with the peristaltic activity from the esophagus leading to the growth of this lesion, which is attached to the esophageal wall by a small pedicle. The polyps are usually located in the upper third of the esophagus. Malignant changes had been reported by Bak et al.[10], Marcial et al.[11] and Petry et al.[12]. Dysphagia and regurgitated mass into the oral cavity had also been seen in this patient without asphyxia. Negative contrast and endoscopic studies should be accepted with caution and repeated if necessary. CT scanning and MRI are more accurate in evaluation of these lesions, which in turn may be useful both for diagnosis and surgical planning[6].

The definitive treatment of fibrovascular polyp is excision, which can be performed either endoscopically or surgically such as Pallabazzer et al.[15] and Badi et al.[19] reported surgical removal by esophagotomy approach. Successful endoscopic esophageal polypectomy have been reported by Jie et al.[17], Lee et al.[20] and Lobo et al.[21] Recent reports on esophageal polyps and their removal are shown in Table 1.

In our case, it was possible to remove the entire polyp endoscopically without complication using a detachable snare loop following a hot snare polypectomy despite being large in size.

Table 1 Recent reports of esophageal polyps and their removal

Report	Year	Size(cm)	Location of polyp	Detection method	Surgical approach	Ref
Garcia B et al.	2012	16 × 7 × 7	Below Killian's area	CT chest, endoscopy	Esophagotomy	13
Madeira FP et al.	2013	23 × 9 × 9	Upper esophageal sphincter	Chagas serology, CT chest, EGD, esophageal manometry	Esophagectomy	14
Pallabazzer G et al.	2013	18 × 5.4 × 4	Hypopharynx	EGD, CT chest, EUS	Cervicotomy and pharyngotomy	15
Park JS et al.	2014	> 5	Cervical esophagus	EGD	Endoscopic polypectomy	22
Badi R et al.	2015	12 × 4 × 3	Cervical esophagus	Barium swallow, EGD, EUS, CT chest	Left cervical exploration	19
Diane L et al.	2016	15 × 5	Cervical esophagus	CT chest, EUS	Endoscopic piecemeal resection	16
Jie L et al.	2016	18 × 6	Cervical esophagus	Barium swallow, EGD, EUS, CT chest	Endoscopic polypectomy	17
Lee JW et al.	2016	12.5 × 3.2	Cervical esophagus	EGD, EUS	Endoscopic polypectomy	20
Lobo N et al.	2016	7	upper esophagus	CT chest, Barium swallow	Endoscopic resection using ultrasonic shears	21

CT = Computer Tomography ,EGD = Esophagogas troduodenoscopy, EUS = Endoscopic ultrasound

Conclusion

Giant fibrovascular polyps of the esophagus are rare tumors. The polyps should be removed as soon as possible depending on the risk of airway obstruction. Appropriate treatment depends on the accurate assessment of the origin, diameter, and vascularity of the pedicle, along with tumor size. Endoscopic procedure has already been accepted as a minimally invasive alternative to surgery, and provides faster patient recovery and early return to work or normal routines.

Disclosure

No authors report any conflict of interest.

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บทคัดย่อ **รายงานผู้ป่วยที่ได้รับการรักษาติ่งเนื้อขนาดใหญ่ที่หลอดอาหารโดยวิธีส่องกล้อง**

ศุภวัฒน์ เลาหวิริยะกมล, นันท์อัคร วิบูลย์ขวัญ, ต่อตระกูล ทองกัน, วรวิทย์ วาณิชย์สุวรรณ, สิริพงศ์ ชีวธนากรณ์กุล, พุฒิศักดิ์ พุทธวิบูลย์

ภาควิชาศัลยศาสตร์ คณะแพทยศาสตร์ มหาวิทยาลัยสงขลานครินทร์

ภูมิหลัง: ติ่งเนื้อขนาดใหญ่ที่บริเวณหลอดอาหารเป็นเนื้องอกที่พบได้น้อยมาก โดยมากจะพบในบริเวณหลอดอาหารส่วนบน แสดงอาการกลืนลำบากและอาการทางเดินหายใจอุดตันจากการสำรอกก้อนเนื้องอกขึ้นมาในช่องปากจนกดกล่องเสียง

การนำเสนอรายงานผู้ป่วย: ผู้ป่วยชายอายุ 34 ปี มีอาการกลืนลำบากและสำรอกก้อนเนื้องอกเข้ามาในช่องปากเป็นครั้งคราว โดยที่ไม่มีอาการเป็นลม ทางเดินหายใจอุดตัน น้ำหนักลด ถ่ายดำ หรืออาเจียนเป็นเลือด หลังจากได้รับการวินิจฉัย ผู้ป่วยได้รับการรักษาโดยการตัดก้อนเนื้องอกผ่านการส่องกล้อง ติดตามหลังจากผ่าตัด 2 ปีพบว่าไม่มีก้อนและอาการกลับเป็นซ้ำ

สรุป: ติ่งเนื้อขนาดใหญ่บริเวณหลอดอาหารพบได้น้อย โดยที่ผู้ป่วยจะมีความเสี่ยงต่อทางเดินหายใจอุดตัน การรักษาที่เหมาะสมจะต้องคำนึงถึงตำแหน่ง ขนาด และเส้นเลือดที่ขั้วของติ่งเนื้อ การรักษาผ่านการส่องกล้องจะทำให้ผู้ป่วยฟื้นตัวและกลับไปใช้ชีวิตตามปกติได้รวดเร็ว