

# Surgical Gauze Pseudotumor (Gauzoma) — A Case Report

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## ABSTRACT

A retained foreign body during an operation has severe medicolegal implications and should be prevented. Its real incidence is unknown but it is roughly estimated to be between 0.01% and 0.03%. Herein we report a 59-year-old woman who suffered from an intraabdominal 8.0 cm calcified mass. A gauzoma was finally diagnosed after a laparotomy. It may have been left when a tubal ligation was performed 20 years previously. After operation and during postoperative 2 years follow-up, her condition is uneventful. We suggest that when a previous operative history is presented, foreign body pseudotumor should be in the differential diagnosis of a patient with an intraabdominal cystic calcified mass. (*Tzu Chi Med J* 2006; **18**:49-51)

*Key words:* foreign body, pseudotumor, gauzoma

## INTRODUCTION

A foreign body left behind during an operation is a severe medicolegal issue. In spite of careful intraoperative precautions and gauze counts, mistakes can still occur. These errors seem most frequent in general surgery, followed by gynecology and obstetrics, and orthopedics [1]. In most instances, the retained foreign body induces a foreign body reaction. However, pseudotumor formation rarely occurs in long-term retention. Herein we report a foreign body pseudotumor (gauzoma) more than 20 years after a tubal ligation.

## CASE REPORT

A 59-year-old woman had a uterine mass and received a laparoscopic hysterectomy in January 2000 in the gynecological division of another hospital. During that operation, another mass was found. It was ovoid with an elastic firm consistency and appeared to arise from the wall of the small intestine. But, it could not be

removed under laparoscopy and was left alone. The postoperative course was smooth and the patient felt well. Three months later, she visited our outpatient department, and asked for further studies and management of the intestinal mass. After admission, a physical examination and laboratory data, including tumor markers were all within normal limits. She reported that she had a tubal ligation more than 20 years earlier. An abdominal computed tomography (CT) scan revealed a well-defined 6.0 × 5.5 × 5.0 cm, hypodense mass with irregular, egg-shell calcification over the periphery of the central abdominal cavity and between small bowel loops and the urinary bladder. Close attachment of the lesion to the bowel loops was noted (Fig. 1). Under the impression of an intestinal tumor or ovarian teratoma with calcification, she received a laparotomy. Surgical findings disclosed a well-encapsulated tumor, with an egg-shell-like calcified wall 200 cm proximal to the ileocecal valve. A gastrointestinal stromal tumor (GIST) was impressed, so a segmental resection of the small intestine with an end-to-end anastomosis was performed. The bilateral adnexae of the uterus showed no anomaly. Grossly, a 19 cm segment of the small intestine with an

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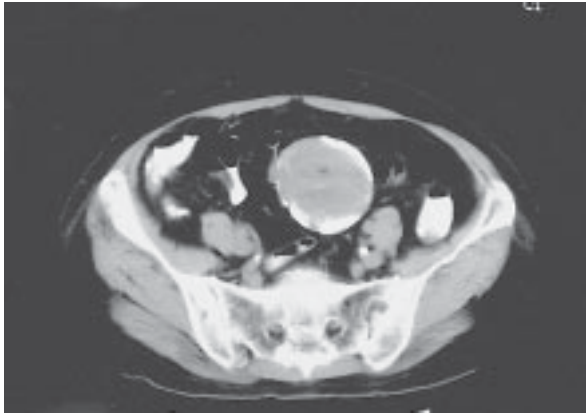


Fig. 1. Abdominal CT scan shows an intraabdominal mass with an irregular, ringed calcified wall.

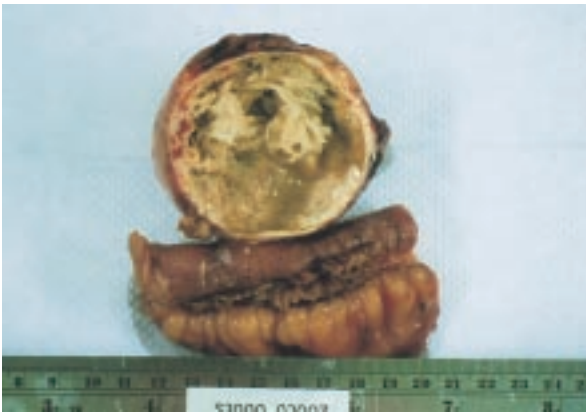


Fig. 2. A cut section shows the mass contains a piece of gauze and yellowish mucoid material and attaches to the intestinal wall.

attached ovoid, well-encapsulated mass, measuring  $8 \times 6.5 \times 6$  cm was noted. A cut section of the mass disclosed a cystic lesion with a thick, fibrotic, calcified wall containing yellowish mucoid material and a piece of gauze which showed no identified radiopaque marker (Fig. 2). Histological sections revealed a fibrotic, calcified cystic wall, aseptic amorphous material, and fragments of textile fibers. Surgical gauze pseudotumor (gauzoma) was diagnosed pathologically. The gauze might have been left when the tubal ligation was performed 20 years previously. After the operation, her course was uneventful and she was discharged 1 week later with an uneventful follow up for 2 years.

## DISCUSSION

Gauze forgotten during an operation can be potentially life threatening. Its rough incidence is estimated to be between 0.01% and 0.03% [2,3]. Foreign body retention may result in an unpleasant medicolegal problem in most instances. However, such as in our case, some forgotten gauzes can be asymptomatic and are never or just incidentally discovered. It depends on whether the retained foreign body is sterile or infected.

The forgotten aseptic gauze can become a granuloma or even a pseudotumor without causing severe symptoms in rare instances [4]. Clinically, it is very difficult to be accurately diagnosed. In the present case, the preoperative impression was an ovarian teratoma and the intraoperative diagnosis was a GIST of the small intestine.

Retained gauze can provoke a foreign body reaction, adhere to neighboring organs and invade a hollow organ nearby. The sequential fibrotic reaction and calcification may show no symptoms as in this case. However, in some complicated cases, vascular erosion occurs, leading to late abscess, chronic fistula and digestive hemorrhage [5].

Although the images in our case were not helpful in the preoperative diagnosis of this retained gauze, some adjuvant radiological findings of foreign body retentions have been reported. For example, gauze is usually manufactured with radiopaque markers which are readily visible on plain radiographs. But, this only came into wide use after the 1980s. Therefore, patients who underwent operations before that time often don't exhibit these markers, as was true in this presented case [6]. The radiological appearance of retained gauze is varied and unspecific. However, it should be suspected when a heterogeneous mass, often with small gas bubbles, packed by a fibrotic capsule is seen radiologically. As in our case, if the retained gauze is in contact with the urinary tract or the gastrointestinal tract, a peripheral calcification can sometimes be seen. Although these effective image findings are helpful, a previous history of surgery is necessary to reach an accurate preoperative diagnosis of a retained foreign body. In addition, early rapid progression of a disease or abscess formation after surgical intervention may actually be a distinct feature of granuloma in a retained foreign body [7-9].

The pathogenesis of a gauzoma is still unclear. However, it is hypothesized that retained gauze might induce an early exudative reaction with development of a foreign body granuloma later. Then, calcification, ossification, and finally a pseudotumor can occur after a long duration [1]. In an animal study, the failure of granulomatous formation in some tested rats suggested that a foreign body reaction is an idiosyncratic reaction [10].

This might be the reason why an asymptomatic gauzoma occurs.

Retained foreign bodies represent serious ethical and legal dilemmas. They frequently occur in special situations such as emergency operations, deep-seated operative locations, and physically and psychologically fatigued clinicians. But, there is currently no perfect standardized procedure for preventing these unpleasant events. It is highly suggested that all gauzes should be carefully handled during surgical procedures and used gauzes be double counted before closure of the incision and at the end of the operation.

In conclusion, when a previous operative history presents, a foreign body pseudotumor should be in the differential diagnosis of a patient with an intraabdominal cystic calcified mass.

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