Original Article

Retained Surgical Sponges (Gossypiboma)

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OBJECTIVE: Retained surgical sponges are seldom reported due to medicolegal implications. Awareness of this problem among surgeons and radiologists is essential to avoid unnecessary morbidity. We present our experience with this entity and review the related literature.

METHODS: The medical records of 11 patients who were diagnosed as having retained surgical sponges from 1990 to 2003 were reviewed.

RESULTS: The incidence was 1:5,027 inpatient operations. There were four males and seven females with a median age of 45 years. The original operations were gynaecological (n = 4), general (n = 4), urological (n = 2) and laminectomy (n = 1). In seven cases, the original operation was performed on an emergency basis. Five patients were obese. A presumed correct sponge count was documented in eight cases. The median time between the original procedure and diagnosis of retained sponges was 12 months. The tentative diagnosis was intestinal obstruction (4 patients), urinary tract infection (1 patient), Crohn's disease (1 patient) and tumour recurrence (1 patient). The correct diagnosis was suggested in the remaining four patients. Surgical removal of the retained sponges was carried out in all cases except one, in which the patient passed the sponge spontaneously through the rectum.

CONCLUSION: Retained sponges are more common in obese patients and after emergency surgery. A high degree of suspicion is important for preoperative diagnosis. Despite the use of radio-opaque sponges and thorough sponge counting, this moribund mishap still occurs. Although human errors cannot be completely abolished, continuous medical training and strict adherence to regulations should reduce the incidence to a minimum. [*Asian J Surg* 2005;28(2):109–15]

Key Words: gossypiboma, retained surgical sponge, retained surgical swab, textiloma

Introduction

Retained postoperative foreign bodies, of which sponges are the most common, is a rare condition.[1] This may be due to the reluctance to publish matters that can lead to medicolegal implications or because it may initiate wide, critical press coverage.[2,3] The condition is sometimes called "gossypiboma" because of the feared possibility of retained sponges (RS) causing gossip about surgeons.[4,5] Despite this rarity in reporting, RS appears to be encountered more commonly than is generally appreciated.[6] In the last 10 years, there have been only a few reports in the literature concerning RS. In this paper, we review our experience with this entity in order to increase awareness among surgeons and radiologists and, thus, avoid unnecessary morbidity, which is still being encountered.

Patients and methods

From January 1990 to December 2003, 11 patients with RS were managed at the surgery departments of King Abdullah

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University Hospital and its affiliated hospitals. These hospitals are located in Irbid Province, which is the second largest demographic area in Jordan, containing about 1.25 million inhabitants. The military hospital in this area treats 35% of the population, while the remaining 65% of the population are treated by our University and affiliated hospitals. On average, 3,950 operations are performed at our hospital and its affiliates each year. In our operating theatres, we apply very well-known standards that require the use of only radio-opaque sponges, which should be counted once at the start and twice at the end of all surgical procedures. If the count is incorrect, then radiography or re-exploration is to be performed.

Patients' clinical notes, radiological investigations, and operative records were retrospectively reviewed. Data regarding age, sex, the type of original operation, the interval between the original operation and the diagnosis of RS, clinical presentation, diagnostic work-up and the tentative diagnosis before identifying the RS were collected and analysed.

Results

The incidence of RS in our hospitals was 1:5,027 inpatient operations. The Table details the characteristics of all the patients. There were four males and seven females with a median age of 45 years (range, 20–64 years). In seven cases (63.6%), the original operation was performed on an emergency basis. Five patients (45.5%) were obese. A presumed correct swab count was documented in the operative notes of the original procedures in eight cases (72.7%). In the remaining three cases (all emergency procedures), no documentation regarding swab count was found. Definitive diagnosis of RS was suspected in only four (36.4%) cases (Table; Patients 2, 6, 9 and 10). The diagnosis was suggested by plain X-ray in Patients 2 and 9 (Figure 1), by barium enema in Patient 10

Figure 1. Plain X-ray of the abdomen of Patient 9, who presented with a palpable abdominal mass 23 months after emergency laparotomy and splenectomy for a ruptured spleen following a motorcycle accident. Note the radio-opaque marker of the retained swab.

Table. Characteristics of the 11 patients with retained surgical sponges

Patient	Sex	Age (yr)	Original operation	Interval (mo)	Clinical presentation	Tentative diagnosis
1	F*	51	Hysterectomy†	48	Intestinal obstruction	Adhesive obstruction
2	M	64	Laminectomy	108	Back pain	Retained swab
3	F	38	Hysterectomy†	72	Abdominal mass	Tumour recurrence
4	F	40	Hysterectomy†	12	Intestinal obstruction	Adhesive obstruction
5	M*	49	Cholecystectomy	7	Intestinal obstruction	Adhesive obstruction
6	F	20	Pyelolithotomy	3	Fever	Retained swab
7	M*	22	Appendectomy†	5	Discharging sinus	Crohn's disease
8	F	43	Hysterectomy†	9	Intestinal obstruction	Adhesive obstruction
9	F*	53	Splenectomy†	23	Abdominal mass	Retained swab
10	F*	45	Appendectomy†	24	Abdominal mass	Retained swab
11	M	62	Prostatectomy	2	Urinary retention	Urinary tract infection

*Obese patient; †emergency surgery.