

# Bilateral cervico-dorsal gossypiboma presenting as discharging sinus

Sushil Kumar, Pooja Abbey<sup>1</sup>, Amit Handa

Department of Neurosurgery, St. Stephen's Hospital, Tis Hazari, <sup>1</sup>Department of Radio-Diagnosis, Lady Harding Medical College, New Delhi, India

## ABSTRACT

Retained surgical sponge is an uncommon complication after laminectomy. A 67-year-old male presented with a discharging sinus in the cervical region following cervical laminectomy. Magnetic resonance imaging (MRI) revealed bilateral symmetrical lesions in the paraspinal area. Re-exploration revealed gauze pieces on either side under the muscle. Persistent discharging wound after surgery should arouse the possibility of a foreign body. Because of the rarity of bilateral lesions, the present case is being reported.

**Key words:** Gossypiboma, laminectomy, magnetic resonance imaging, retained gauze

## Introduction

Gossypiboma is retained surgical sponge with surrounding foreign body reaction. They are more common in abdominal and thoracic surgeries. They may remain silent for many years. These are rarely reported due to medico-legal implications.<sup>[1]</sup> Oklen (2006) found only 32 cases of spinal or paraspinal gossypiboma reported in the literature from 1965 to 2006. We came across bilateral symmetrical gossypiboma following cervical laminectomy, and because of rarity of bilateral symmetrical cervico-dorsal gossypiboma, this case is being reported.

## Case Report

A 67-year-old male presented with discharging sinus in the cervical region and minimal residual stiffness in the limbs. The patient had undergone cervical decompressive laminectomy for multisegmental spondylotic myelopathy 7 months back. Physical examination revealed a discharging sinus in the lower cervical region. He was ambulatory and had spastic quadriparesis. Motor power in all four limbs was grade 4 (active

movement against opposing force – Medical Research Council Scale). Routine investigations revealed no abnormality. Pus from the cervical sinus was sterile on repeated cultures. Magnetic resonance imaging (MRI) of cervical spine revealed bilateral symmetrical well-defined oblong lesions in paraspinal locations. On T1-weighted images, the periphery of the lesion was isointense and the center was hypointense [Figure 1a]. On T2-weighted images, the periphery of the lesion showed hyperintensity and the center was predominantly hypointense with few interspersed hyperintense areas [Figure 1b]. On axial T2-weighted images, two lesions were seen lying symmetrically in the paraspinal locations [Figure 1c]. Re-exploration of the wound revealed a gauze piece on either side under the muscle, infiltrated with small pockets of pus and granulation tissue. Sponges were removed and the wound was washed with saline mixed with antibacterial agent. Culture from pus and foreign body did not grow any organism. Nevertheless, the patient was given gentamycin for a week and ciprofloxacin for 2 weeks. Wound healed within 7 days and the postoperative period was uneventful.

## Discussion

Cotton pads and sponges are used to achieve hemostasis during the subperiosteal dissection of the muscles from

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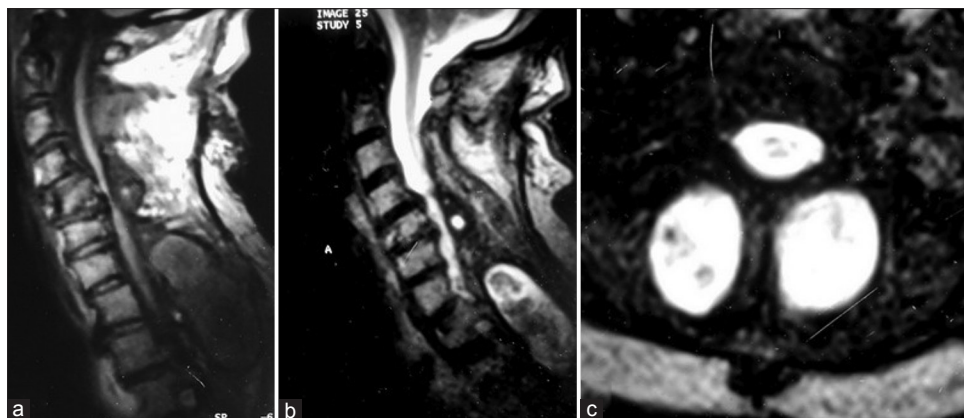
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## Address for correspondence:

Dr. Amit Handa, Department of Neurosurgery, St. Stephen's Hospital, Tis Hazari, New Delhi, India. E-mail: dramithanda@yahoo.com

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**Figure 1:** (a) Magnetic resonance imaging cervical spine showing a well-defined oblong lesion, isointense, with a hypointense center on sagittal T1-weighted image; (b) Hyperintense periphery with hypointense center on sagittal T2-weighted image; and (c) Two symmetrical lesions in the paraspinal locations on axial T2-weighted image

the lamina. A surgical sponge that is inadvertently left behind in the wound eventually becomes gossypiboma. These sponges can lead to infection and abscess formation. However, they may remain clinically asymptomatic for years together and the longest reported asymptomatic period is 40 years.<sup>[2]</sup> Small cottonoids are more commonly lost than larger sponges. Usually it is only one sponge, but in our case there were bilateral sponges symmetrically left inadvertently after subperiosteal dissection of the muscles. The retained sponges may produce complications like abscess, delayed wound healing, and granuloma. *Staphylococcus aureus* and *Enterococcus* are the most common pathogens in the spinal infections that occur after spinal surgeries.<sup>[3]</sup> MRI picture of hypointensity on T1-weighted images and hyperintense rim surrounding the hypointense center on T2-weighted image should arouse the suspicion of foreign bodies like gauze, lint, or cottonoids. In a case of longstanding wound infection or discharging wound that does not respond to antibiotic therapy, one should suspect the possibility of a retained foreign material such as patty or sponge if the history of surgical intervention is present. The term “gossypiboma” is used to describe a mass within the body, which comprises cotton matrix surrounded by foreign body reaction.<sup>[4]</sup> The non-absorbable sponge induces two types of reactions.<sup>[5]</sup> “Exudative reaction” leads to formation of abscess with or without secondary bacterial infection. The other type of reaction is “aseptic fibrinous response,” which creates adhesions and encapsulation and eventually results in development of foreign body granuloma. The exudative type of gossypiboma causes symptoms earlier than the fibrinous type.<sup>[5]</sup>

Surgical sponges containing radio-opaque materials can easily be identified on X-rays and computed tomography (CT) scans, but those without radio-opaque markers are difficult to identify by standard radiographs. MRI findings in such cases are variable and non-pathognomic and may be misdiagnosed as tumor. These lesions appear to have variable signal intensities on MRI, which depend upon the fluid and

protein contents of the lesion. Kuwashima *et al.* (1993) reported that signal intensity of the gossypiboma varied on T1- and T2-weighted MRI images. The masses with the center of high signal intensity on T1- and T2-weighted images had a surgical sponge that was rich in serosanguinous fluid with a high protein concentration, whereas the masses with the center of low signal intensity on T1- and T2-weighted images were mainly composed of organized cotton matrix with little fluid.<sup>[6]</sup> In the present case, T1-weighted images revealed lesion with low signal intensity interspersed with high signal surrounded by high intensity signal on the periphery both on T1 and T2 MRI images, indicating central gauze with small pockets of granulation tissue.

The only treatment for clinical symptoms is surgical removal of the mass, which cures the patient. Retained sponges do not take part in any biochemical reaction or specific decomposition, but evoke a foreign body reaction.<sup>[7]</sup> The presence of well-delineated mass on MRI in postoperative patient with persistent infection should raise the possibility of a retained surgical sponge. These cases are rarely reported mainly due to medico-legal implications.<sup>[8]</sup> Considering that more and more civil law suits are being filed for surgical negligence, gauze and pads should be tagged to allow them to be easily located and removed and all the pads and cottonoids should be counted with meticulous care before closing the wound.

## Conclusion

Meticulous approach and adequate measures can prevent the complication of gossypiboma and reduce lawsuits against negligence.

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## Conflicts of interest

There are no conflicts of interest.

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