

PORT-SITE TUBERCULOSIS AFTER LAPAROSCOPY

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Abstract

In light of the explosive increase in laparoscopic surgery there is concern about the effectiveness of sterilizing laparoscopic instruments by immersion in 2% glutaraldehyde. This article describes 02 (two) cases who presented with biopsy proven granulomatous lesion of tuberculosis at the port site which were of primary origin.

Introduction

Laparoscopic cholecystectomy is the gold standard today for the treatment of cholelithiasis and some other intra-abdominal surgical conditions. Laparoscopy has its own set of complications in addition to those operation proper¹. A rare complication of two primary tuberculous infection at the port site following laparoscopic cholecystectomy is reported.

Case- 1

A 65-year-old female, known case of cholelithiasis with non insulin dependent diabetes mellitus (NIDDM) and hypertension (HTN) was admitted in a military hospital for laparoscopic (LC) cholecystectomy. DM and HTN were under well control with medications. All pre-operative and pre-anesthetic investigations were performed and all were found within normal limits. LC was performed on 1st August 2007. Per-operatively the gall bladder (GB) was found normal shape, size with mildly thickened wall but all other intra-abdominal organs were normal. The excised GB was taken out of the abdominal cavity through the epigastric port. Post operative recovery was uneventful and the patient was discharged after 07 (seven) days of operation. The excised gall bladder on histopathology revealed chronic cholecystitis. On 12th September 2007 the patient was re-admitted for an infected wound in the epigastric port with parietal abscess. The wound was explored and the abscess was drained. Pus for culture from the wound revealed no growth. Frequent dressing of the wound used to be done but there was no significant improvement of the wound. The wound was 08cmX03cmX03cm with unhealthy granulation tissue and scanty serosanguinous discharge and the margins were undermined (Photo-01). Incision biopsy from the margin and unhealthy granulation tissue from the wound revealed granulomatous lesion simulating tuberculosis. The patient was evaluated with tuberculin test, blood for anti-tuberculosis (anti-TB) antibodies, wound swab for acid-fast

bacilli (AFB) and all were negative for tuberculosis. Anti TB chemotherapy with standard drug regime was provided to the patient. The local wound was managed with frequent dressing and the wound was completely healed up and the patient was asymptomatic. The patient was discharged in appropriate time (Photo-2).



Photo-1 : Unhealthy granulation tissue and undermined margins



Photo-2: Patient at the time of discharge (Case-1)

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Case-2

A 40-year-old, retired army individual with symptomatic cholelithiasis was admitted in a military hospital on 03 October 2007 for LC cholecystectomy. After all pre-operative and pre-anesthetic evaluation LC was performed on 19 November 2007. Per-operatively gall bladder was found with thickened wall and fibrosed. All intra-abdominal organs and abdominal wall was found normal. The GB was taken out through the epigastric port. Post operative recovery was uneventful and the patient was discharged after 07 days of operation. The excised GB on histopathology revealed chronic cholecystitis. The patient was again admitted on 30 December 2007 for non healing wound in the epigastric port. All relevant investigations including culture from the lesion were performed but no definitive cause could be detected. The wound was 06cmx04cmx03cm and the margins were undermined with scanty serosanguinous discharge and unhealthy granulation tissue (Photo-3). The granulation tissue was sent for histopathological exam which revealed granulomatous lesion consistent with tuberculosis (Photo-4). The patient was thoroughly investigated to find out any TB focus. No focus was found. Montoux test was 10 mm indurations, blood for anti TB antibody (Ig Ab) was positive. The patient was provided with standard anti TB chemotherapy and the local wound was managed with frequent dressing. The patient was completely cured off and was discharged in appropriate time (Photo-5).



Photo-3: Unhealthy granulation tissue and undermined margins

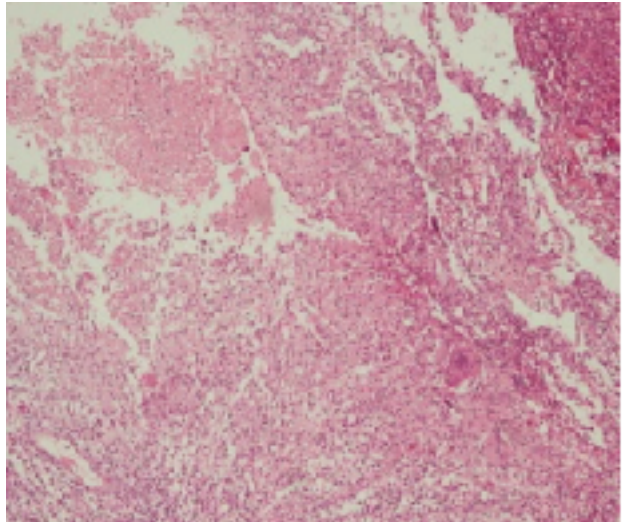


Photo-4: Histopathology slide showing Granulomatous lesion with Langhans's type giant cell



Photo-5: Patient at the time of discharge (Case-2)

Discussion

Laparoscopic cholecystectomy (LC) has inherent risks related to laparoscopy in addition to those related with cholecystectomy. It includes complications related to the creation of pneumoperitoneum, bowel injury, cardiac arrhythmias and others². Cutaneous tuberculosis makes up only a small proportion of all cases of extrapulmonary tuberculosis³. There are three ways in which cutaneous tuberculosis generally occurs:

- from an exogenous source (inoculation tuberculosis)

- from an endogenous source (secondary tuberculosis) and
- from a haematogenous source³.

Both of the patients of this study had no foci of tuberculosis and laparoscopy ruled out any evidence of abdominal tuberculosis. Thus in both these cases the most likely of transmission would be via the laparoscope probably the instrument was improperly sterilized or the organisms were resistant to the mode of sterilization leading to implantation of tubercle bacilli in the subcutaneous plane and development of granuloma⁴.

Sterilization is defined as the complete elimination of all forms of microbial life⁵. However it is widely agreed that 2% glutaraldehyde achieves high level disinfection and not sterilization and it is a standard agent for reprocessing of laparoscopic instruments in many centers⁶. Several publications however have highlighted failure of a 20 min instrument soak in 2% alkaline glutaraldehyde to sterilize instruments⁷. When 2% alkaline glutaraldehyde is used, the following principles are recommended. Careful pre-cleaning of instruments before their immersion in the disinfectant, use of the agent at the room temperature (25°C) which may require heating it in cool operation theatre environment and frequent checks of the glutaraldehyde concentration because repeated use results in dilution⁸. Guidelines for reprocessing laparoscopic instruments have not been standardized. The Minimal Access Therapy Decontamination Working Group has recommended only 10 min soak for laparoscopic instruments with longer time if tuberculosis is suspected⁹.

Conclusion

Currently prevalent practices of immersing laparoscopic instruments for 20 min in 2% glutaraldehyde should be re-examined. The laparoscopic instruments should ideally be sterilized by autoclaving, although it runs small risk of damage to the delicate instruments as this may be the only method of preventing such cases.

References

1. Akamatsu T, Tabata k, Hironaga M, Uyeda M. Evaluation of the efficacy of a 3.2% glutaraldehyde product for disinfection of fiberoptic endoscopes with an automated machine. *J Hosp Infect* 1997; 35: 47-57
2. Ponsky JL. Complications of laparoscopic cholecystectomy. *Am J Surg* 1991; 161:393-5.
3. Gwackroger DJ. Myobacterial infections. In: Champion RH, Burton JL, Burns DA Breathnach SM, editors. *Textbook of dermatology*, volume 2. 6th ed. Oxford: Blackwell Science, 1998.p. 1187.
4. Jindal D, Pandya R, Sharma SS. Abdominal wall tuberculosis following laparoscopic cholecystectomy. *Br J Surg* 1994; 81:719.
5. Rutala WA. Disinfection, sterilization and waste disposal. In: Wenzel RP(ed) *Prevention and control of nosocomial infections*. Williams and Wilkins, Baltimore, MD; 1997.p.539-594.
6. Burns S, Edwards M, Jennings J, Jolly D, Kovac S, Lithauer D. Impact of variation in reprocessing invasive fiberoptic scopes on patient's outcomes. *Infect Control Hosp Epidemiol Suppl*1996; 42
7. Griffiths PA Babb JR, Bradley CR, Fraise AP. Glutaraldehyde resistant *Mycobacterium chelonae* from endoscope washer disinfectors. *J Appl Microbiol* 1997; 82:519-526.
8. DiMarino AJ, Gage T, Leung J, Ravich W, Wolf D, Zuckerman G, Zuccaro G. American Society for Gastrointestinal Position Statement. *Reprocessing of flexible gastro-intestinal endoscopes*. *Gastrointest Endosc* 1996; 43: 540-546.
9. Aylife G (2000) Decontamination of minimally invasive fiberoptic scopes and accessories. *J Hosp Infect* 2000; 45: 263-277.