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Case Report

The control of the port site bleedings with Foley catheter in obese patients

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ABSTRACT
The control of port site bleedings (PSB) is particularly difficult in obese patients. PSB can lead to morbidity via inhibiting the minimally invasive features of laparoscopic surgery such as the increase in the incision size. PSB can be controlled by Foley catheter. PSB has been observed in four patients with body mass index >35 and the bleeding cannot be prevented with different hemostasis techniques (for instance cauterization, etc.). Bleeding can be controlled upon placing the Foley catheter and then the balloon was inflated and putting it to the traction in the port site. Umbilical cord clamp was used instead of traditional methods for traction. In addition to the hemostatic effect of traction, the effect of compression of the umbilical clamp contributed to hemostasis. Catheter was removed after 24-36 hours. Bleeding did not occur again upon the usage of Foley catheter in these patients. Foley catheter traction is an easy and efficient hemostatic technique in patients with PSB.

Keywords: Foley catheter, hemostasis, bleeding, laparoscopy, morbidity, port site

INTRODUCTION

Port site complications are seen in 2-3% of the cases in laparoscopic surgery. These complications can be PSB, port site infections and post site hernia (1, 2). PSB can occur due to the damaged vessels in the subcutaneous, peritoneal area and muscular layer. In order to prevent the bleedings, it should be controlled by deep sutures, cauterization and sometimes enlargement of the incision. This leads to the increase in complications of the postoperative wound site (infection, hernia and pain, etc.) and bad cosmetic outcomes. The bleedings that cannot be controlled and overlooked might sometimes be serious and can cause morbidity. Foley catheter usage in PSB was previously described. In this study, we aimed to describe the different fixation method of Foley catheter.

CASES

Four female patients with the average age of 46, and average BMI 38 kg/m^2 (range 36-42) were included in the study. This technique was applied to patients when the bleeding did not stop in the port site during the laparoscopic cholecystectomy with the help of other techniques such as cauterization. Bleeding developed in epigastric region (10 mm) in two patients and in midclavicular port (5 mm) in other two patients. Bleeding tried to be stopped firstly by cauterization in patients with PSB observed with the help of camera. When the bleeding cannot be controlled in patients in spite of cauterization, 22 F Foley catheter placed under direct observation in the bleeding trocar region by the help of graspers that was already placed through another port. Foley catheter balloon in peritoneum was filled with 15-20 cc of saline and it was seen accompanied by camera that bleeding stopped by applying traction outside skin. Then, Foley catheter was clamped with umbilical cord clamp and fixed. Hemostasis provided by tightened the abdominal wall (red line) between the balloon and umbilical cord clamp (Figure 1-2). Foley catheter was taken out from patients 24-36 hours later. Bleeding was not seen again in any of the patients. All of the patients were discharged from the hospital after Foley catheter was taken out.

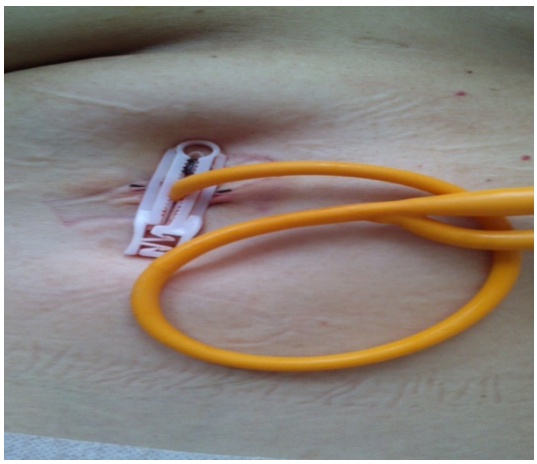

Figure 1: *Application of Foley catheter*

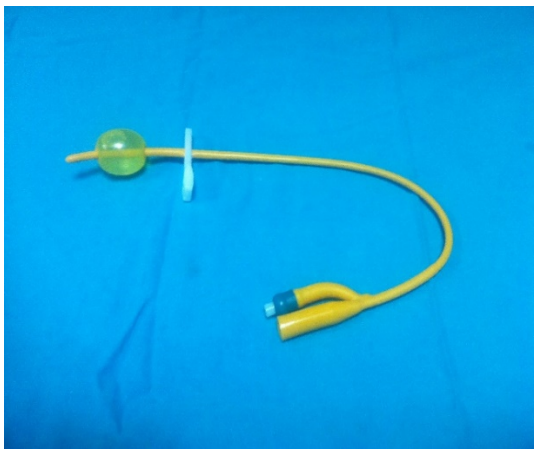

Figure 2: *The abdominal wall is tightened in the red region*

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DISCUSSION

Port site bleedings can sometimes create insurmountable situations during the operation. Port site complications can be prevented by simple precautions such as having knowledge about the abdominal wall anatomy, placing ports carefully and in a planned way and transillumination. However, it is hard to observe the vessels by transillumination in obese individuals. Therefore, PSB can be the undesirable reason for morbidity in obese patients like increase in the incision size and deep sutures (2-4). It has been reported that PSB can be observed at the rate of 7.5% particularly upon bariatric surgery although PSB is seen rarely (3). PSB can be sometimes overlooked in preoperative period due to the high intra-abdominal pressure and port pressure. When intra-abdominal pressure drops, and the port is taken out after operation, bleeding can become apparent.

There are different defined techniques in order to stop the bleeding. These techniques are deep sutures, applying of hemostatic agents in the port site (for instance Surgical) and using Foley catheter (5-7). There can be a need to use one of these techniques to stop PSB especially in obese patients and patients using anticoagulants and/or antiaggregant. Inserting the Foley catheter is a very easy method. Ruiz-Tovar et al. (3) have stated that PSB can be controlled by using Foley catheter in 17 patients and they have also showed that there was no recurring bleeding in any of these patients. They have further reported that bleeding was from the 12-mm port site in 14 patients and 5 mm port site in the remaining 3 patients. Complications such as bleeding and hernia can increase as port diameter increases (3, 8).

Usage of Foley catheter is an easier method than *deep sutures* (3). Foley catheter is fixed by suture according to the Foley catheter applications explained in literature. With respect to our method, Foley catheter was fixed on skin by umbilical cord clamp upon traction instead of suture fixed. This fixation method is more practical than suture detection.

CONCLUSIONS

Port site bleedings are undesirable and troublesome complication especially in obese patients. Foley catheter method is simple and efficient in order to stop the PSB in obese patients or patients using anticoagulants and/or antiaggregant in case the bleeding cannot be prevented by electrocautery. Fixation of Foley catheter by umbilical cord clamp makes the method even more simple and efficient.

Competing Interests: There aren't any non-financial competing interests (political, personal, religious, ideological, academic, intellectual, commercial or any other).

Ethics committee approval: Ethics Committee Approval cannot be obtained since this technique is used in an emergent medical necessity during laparoscopic cholecystectomy.

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