Partial wound dehiscence after midline laparotomy: A complication after tubo-ovarian abscess evacuation with pregnancy

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Abstract

Wound dehiscence is the premature opening of a wound along surgical line. It is a surgical complication that results from poor wound healing that can increase significantly the risk of morbidity and mortality. Risk factors in general are age, diabetes, obesity, cancer, emergency surgery, pulmonary diseases, malnutrition, weight loss, anaemia, chemotherapy and radiotherapy. The objective of this study is to present a case of partial burst abdomen after midline laparotomy at 28 weeks of gestation due to tuboovarian abscess evacuation.

Key words: wound dehiscence, laparotomy, pregnancy

Introduction

An abdominal wound may occur due to disruption in the anterior abdominal wall caused by either trauma [1] or any surgical intervention in order to gain access to the underlying pathology [2]. In the latter scenario, incision thus made passes through various layers of the anterior abdominal wall from skin, subcutaneous tissue, linea alba and peritoneum. Such incision initiates a cascade of mechanisms at cellular level, which aims at achieving healing at incision site [3]. This healing may occur by primary intention (wounds with opposed edges) or by secondary intention (wounds with separated edges). Healing by secondary intention occurs whenever there is extensive loss of cells and tissue as occurs in infarction, inflammatory ulceration, abscess formation etc. Whenever there is hindrance in the normal cascade of abdominal wound healing process, it results in the disruption of the abdominal wound that is also known as wound dehiscence.

The abdominal wall disruption may be partial or complete. Partial disruption is when one or more layers have separated but the underlying sheath and peritoneum is intact. Complete disruption is when all the layers have disrupted leading to viscous evisceration. The reported incidence continues to be 0.2% to 6% with associated mortality of 9 to 44% [4]. Factors affecting wound healing in abdominal wall and those leading to its disruption have been discussed by various previous reports but no clear consensus can be made. General patients profile like age, sex, nutritional status, pre-operative medical condition like anaemia, diabetes, jaundice, renal failure, bad ASA (American Society of Anaesthesiologists) scoring, intra-operative knot breakage, suture material rupture or suture cut through, emergency or elective surgery, type and duration of surgery and post-operative wound infection or increase in intra-abdominal pressure are the various factors leading to abdominal wall dehiscence.

Case presentation

A 35 year old woman was admitted to our hospital with severe abdominal pain and fever. She is G3P2, history of previous II caesarean section with 2 living children.

At 28 weeks of gestation, she presented with lower abdominal pain and fever. Physical examination showed a body temperature of 38.3°C, and a fundal height corresponding to 28 weeks of gestation. The cervix was closed. Ultrasound showed nothing abnormal in pregnancy but right adnexal heterogeneous complex mass nearly 10 ×15 cm with free fluid in Douglas pouch, highly suspicious of tuboovarian abscess, that revealed pus on culdocentesis.

Blood tests revealed a high white blood cell count (WBC) of 30 × 10.9/l with neutrophilia and an elevated C-reactive protein (CRP). Empirical antibiotics were started for 48 hrs with no response. So, a lower midline exploratory laparotomy was performed revealing pus in abdomen and huge right adnexal mass ruptured with pus inside. Extension of laparotomy to upper midline and drainage of pus with right salpingo-oophorectomy and insertion of drains was performed.

Postoperatively, the woman continued to receive antibiotics according to culture and sensitivity. Her tem-
perature normalised and CRP dropped. On day 5 postpartum, the wound developed serosanguinous discharge even with daily dressing at the middle part of the wound and a small peri-incisional erythema; the wound borders were closed. On day 11 postpartum, the wound was now more erythematous and gaping. WBC 15 × 10.9/l. Standard conservative wound care was advised and the woman was discharged to home care 19 days after delivery. Twenty days after, violaceous coloured wound borders were spread expanding the defect to the rectus sheath (Fig. 1). 2 weeks later due to abdominal distension by pregnancy the defect was not closed by conservative means. So refreshing the edges with suturing by retention sutures was done under regional anaesthesia. Daily dressing postoperative was done. Stitches were removed after 2 weeks with good healing. caesarean section was done at 39 weeks with normal baby.

It is reported in literature that majority of cases having burst abdomen are operated during emergency [9] and same was observed in our case as well. A large number of surgeons now prefer the midline incision instead of para median incision for abdominal exploration because of easy accessibility to all quadrants of abdomen as it is easy and simple to perform and close. Among a number of variables responsible for burst abdomen, wound closure is of utmost importance. One of major consideration should be given to the length of suture as compare with the length of wound and the closure should be tension free [11]. A number of technique for the closure of abdominal have been discussed in international literature [7], among those the large number of authors recommend continues running non absorbable suture as the best method for closure of abdominal wound [11]. The quality of suture material is also of utmost value, because the breakdown of suture will result into wound opening, which might result into wound dehiscence. Few authors have mentioned that in patients having wound dehiscence broken sutures were found which might cause the dehiscence of wound [12]. A number of factors are unavoidable among which the foregoing pathology of abdomen is important (for example peritonitis).

Wound dehiscence is observed frequently in patients having peritonitis as in our case. Threat of such patients can be foresighted by abdominal wound dehiscence risk index. A number of other factors are also mentioned in recent published literature including persistent infection, serous discharge, pregnancy as in our case and nutritional status of patient are among most important detrimental factors determining the fate of wound and makes wound more exposed to dehiscence [13, 14].

Discussion
Ever since exploratory laparotomy is practiced, wound dehiscence is a common complication faced by surgeons, which if not treated accordingly, can lead to life threatening situations [5-8]. Wound dehiscence, also termed as burst abdomen, needs early detection and prompts treatment failing to which leads to disastrous consequences. Varying frequency of wound dehiscence has been reported in international and local literature [5, 7, 8]. A few of authors have reported wound dehiscence of 1-2%, whereas is the frequency in local literature is quite high i.e. around 6% [9-11].

Conclusion
Various causes of wound dehiscence are preventable. Patients need to be well prepared for surgery beforehand especially with regard to effective and judicial control of infection and optimizing all systemic parameters of patient including nutritional status of patients.

Ethical approval
Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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References


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