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Management of post-partum recurrent perineal wound dehiscence with flap cover

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Abstract
Perineal wound dehiscence is a significant debilitating factor in the postpartum phase. Although the management of 3rd and 4th degree perineal tear is well described, there is no clear data about management of 2nd degree tear and wound dehiscence. Most are managed by secondary suturing or left to heal by secondary intention. Despite this many patients develop wound dehiscence and have long term complications due to scarring. In this case report we present a patient with recurrent wound dehiscence which was initially managed by multiple attempts at suturing. We did a debridement and lotus petal perforator flap to reconstruct the defect. Early use of flap cover in perineal wound dehiscence can achieve all the goals of wound management with good long term results.

Keywords: Perineal wound dehiscence, early flap cover, lotus petal flap, perforator flap.

Introduction
Perineal wound dehiscence can be the cause of significant physical, psychosocial and financial burden to the patient. Approximately 85% of women undergoing vaginal delivery sustain perineal injury [1]. Perineal tears are classified into 4 degrees depending on the severity of the tear and the tissues involved. Although the management of 3rd and 4th degree perineal tear is well described, there is a dearth of literature about management of 2nd degree tear and wound dehiscence following perineal tear suturing. Most of these cases are managed by secondary suturing or left to heal by secondary intention. Until the wound heals the patient experiences tremendous difficulty in sitting, breast feeding her child, and taking care of her child's daily needs which can be detrimental to the mother child bonding [2]. Aggressive and early management of perineal tears and their complications like infection and wound dehiscence will ensure early rehabilitation of the new mother in the postpartum phase. In addition, early wound coverage will prevent raw areas and the sequelae of healing by secondary intention like vaginal stenosis leading to dyspareunia [3]. The early use of flaps in patients with perineal tears and recurrent wound dehiscence helps in achieving the above goals.
In this article we present the case of a 25 years old mother, who sustained second degree perineal tear with episiotomy wound at the time of delivery, which did not heal despite multiple attempts at suturing the tear and was successfully managed with flap cover for the defect.

Case History
A 25 years old primiparous lady presented to us 3 months postpartum with complaints of a non healing wound in the perineal region associated with severe pain, painful urination and defecation, inability to sit and breast feed her child and dyspareunia. She gave history of a vaginal delivery 3 months before during which she had sustained perineal injury and had an episiotomy which had been sutured primarily. She had developed a haematoma on the same day which had been drained and wounds had been resutured. Two weeks later she had developed pain and discharge from the wound, for which she had been managed conservatively for a few days, followed by secondary suturing of the wound. However, there was a dehiscence of the wound again accompanied by watery discharge from the wound. Hence she was referred to us for further management of the wound.
On examination, the patient was conscious and stable. On local examination there were two wounds seen at 5 o'clock and 7 o'clock positions.

There was a defect in the vaginal mucosa over the posterior 1/3 of the vagina. There were sutures seen in situ and serous discharge from the wounds. The wound edges were friable and bleeding on touch. There was a painful scar tissue all around the introitus of the vagina. (Figure 1). The anal orifice was normal and this was confirmed by a per rectal digital examination. She was planned for debridement of the wounds and flap cover for the defects.

The surgery was performed under epidural anaesthesia with the patient in lithotomy position. A urethral catheter was inserted. Intraoperatively, there were two defects in the posterior part of the vagina at 5 and 7 o'clock positions. Necrosis of vaginal mucosa in the posterior third was noted. There was a large haematoma seen beneath the wound at 7 o'clock position. There was severe scarring at the introitus. The haematoma was evacuated and thorough wash was given. (Figure 2) The edges of the defects were freshened. The intact vaginal mucosa was quilted to the underlying soft tissue to obliterate the dead space. These steps enabled us to assess the size of the defect and plan the flaps in reverse. The perforators were mapped on both sides using a hand held ultrasound doppler. Fasciocutaneous flaps were marked based on these perforators. (Figure 3) The dissection of the flaps was done under loupe magnification to identify the perforators. On the left side, a robust perforator was identified at the base of the flap which was then rotated through 90 degrees while on the right side, the perforator-based flap was advanced in a VY fashion. Both flaps were sutured to the edges of the intact vaginal mucosa maintaining an adequate introitus. (Figure 4) A vaginal pack was inserted for 48 hours postoperatively. The urethral catheter was removed on the 4th postoperative day. The patient recovered well and was discharged on the 5th postoperative day. The flaps settled well and there was complete wound healing within 3 weeks.

At 2 years of follow up the patient was comfortable, the flaps were well settled, the donor sites had healed well. (Figure 5) The patient was comfortable with no discomfort or dyspareunia.

Discussion

Perineal tears affect 85% of women during childbirth to varying degrees; this includes episiotomy wounds. [1]The incidence of second-degree tear, that is a tear involving the perineal muscles but not involving the anal sphincter, has been reported to be between 35.1%- 78.3% in primiparous and 34.8- 39.6% among multiparous patients [4]. The data on the number of patients developing wound dehiscence is lacking. A meta analysis done by Jones *et al* was not able to conclusively define the incidence of wound dehiscence due to lack of standardised data, but found it ranging from 0.21% to 24.6% [5]. Historically perineal wound dehiscences were managed conservatively and left to heal by secondary intention. In some centres these wounds were managed by secondary suturing. Dudley *et al* have concluded in their PREVIEW trial that at the end of 3 months patients who had undergone secondary suturing had better outcome than those who were managed conservatively [6]. But both these methods leave the patient with significant morbidity and there is no consistent data about the percentage of patients who develop wound dehiscence following secondary suturing needing further management.

Delayed perineal wound healing in the postpartum phase negatively impacts the mother child bonding and is a source of tremendous physical and psychosocial burden to the patient. The objectives of perineal wound management are early wound closure and restoration of the supple perineal anatomy so that both excretory and sexual functions can be carried out unhampered. Failure to do this leads to scarring and late sequelae like dyspareunia. An acute perineal tear may be treated with primary suturing in layers. However, when a patient presents with recurrent wound breakdowns following perineal tear suturing, the cause is usually tissue necrosis which needs to be replaced with like tissue. Use of early flap cover in such cases helps to achieve the above goals early with good long term results thus reducing the postpartum morbidity.

To our knowledge there is no report of using perforator flap in the treatment of perineal wound dehiscence following perineal tear suturing.

The choice of flap depends on the degree of tear and the type of soft tissue defect. The perineum has a rich vascular supply with multiple anastomosis and perforators, hence perforator based flaps can be easily planned here. The tissue is soft and pliable hence any tissue defect in this area can be closed with like tissue and primary closure of the donor site can be easily done which in turn avoids a painful graft in the area. Using a robust perforator as the vascular basis of this flap allows islanding of the flap so there are no bulky dog ears in the donor site which helps in performing a more aesthetic reconstruction. Use of perforator-based flaps also ensures a more reliable blood supply to the flap which would otherwise require inclusion of the perineal muscles making it a more bloody dissection [8, 9] We used the lotus petal flap first described by Yii *et al* in this case, which allowed primary closure of the donor site with minimal morbidity. Yii *et al* and many authors, have described the use of these flaps and their modifications, for the closure of perineal defects after onco surgery, and perineal trauma, but its use for the management of perineal wound dehiscence has not been described [9]. This is a simple flap which can be done for treatment of almost any perineal wound dehiscence, the only additional requirements being a hand held ultrasound doppler and a magnifying loupe.

Fig 1: Pre operative image, with defects seen at 5 o'clock and 7o'clock position, with previous sutures in-situ.

Fig 2: Necrotic vaginal mucosa and loss of soft tissue in the posterior 1/3rd of vagina

Fig 3: Lotus petal flap rotated into the defect on the left side and VY advancement flap marked for the right side defect

Fig 4: Both flaps inset to cover the soft tissue defect and sutured to the intact mucosa

Fig 5(A): Early post-operative at 2 weeks after surgery **(B)** 2 years after surgery

Conclusion

In conclusion, perineal wounds are a common occurrence especially in primiparous patients and perineal wound dehiscence can be a cause of significant distress to the patient. Early debridement and flap cover to manage such wounds will help in early rehabilitation of the patient in the postpartum period.

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