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A Case Report: W-Plasty For Secondary Phimosis. An Innovative Approach To An Established Challenge

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ORIGINAL

Abstract

Secondary phimosis is a technical error that occurs when the prepuce's inner mucosa layer is not sufficiently removed, and it heals with a fibrotic ring after circumcision. Re-circumcision remains the mainstay for in managing secondary phimosis however it still may lead to complications such as formation of fibrotic scar. Here, we propose a new method for revision of secondary phimosis by implementing the W-plasty technique. W-plasty is a new approach for secondary phimosis. It not only helps to release the cicatricial scar, but also prevents further scarring in secondary phimosis.

Keywords : Secondary phimosis, cicatricial scar, post circumcision complication , W plasty

Introduction

Circumcision is one of the most common surgical operations in children for cultural, religious, and medical reasons in Malaysia. Despite circumcision being one of the most common procedures today and the presence of the MOH circumcision guideline, complications still occur. There are early and late complications post circumcision. The early complications were bleeding, hematoma, wound infections, and glans burn injury. For the late complications of circumcision, meatal stenosis, incomplete circumcision, and secondary phimosis. Phimosis, which refers to the inability to retract the foreskin, can be classified into primary (congenital) and secondary (acquired) forms. Secondary phimosis, as outlined, often results from complications after circumcision procedures like the Plastibell technique. It occurs due to factors such as improper placement of the ligature or an ill-fitting Plastibell ring. Revision circumcision remains the mainstay for managing secondary phimosis. (1) Here we are implementing the W-plasty technique, which was described by Borges in managing secondary phimosis.

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Case Presentation

A case of 12 years 12-year-old boy with no medical illness underwent mass ritual circumcision. The operation was uneventful. However, 2 months post-surgery parent notices unable to retract the foreskin. He is still able to urinate. He denies swelling of the foreskin and pain during urination or erection. Clinically, there is redundant foreskin, a pinpoint cicatricial ring at the foreskin and unable to retract down [Figure 1a & 1b]. He has subsequently been referred to our department for secondary phimosis. He was then undergoing scheduled corrective surgery with multiple W-plasty around the cicatricial stenotic ring 3 months later. Intraoperatively, W incision marking over the stenotic ring over the outer prepuce and redundant inner prepuce. [figure 2]. Prepuce incision was made with an iris curved according to pre-operation marking W. Inner and outer prepuce were then approximated with Vircyl 6/0 undyed. Post-operation, he recovered and was

discharged well. He has no recurrent of cicatricial scar and is satisfied with the outcome in 3 months follow up [Figure 5a & 5b].



(a) Redundant Inner Prepuce Post Circumcision



(b) Black Arrow Indicates Cicatricial Stenotic Ring And "Mercedes" 3 Points Incision Marking Made Over Outer Prepuce

Figure 1



(a) Dorsal view. Black arrow indicates outer prepuce.



(b) Ventral view. Mercedes 3 points incision marking made over the inner prepuce in between the 3 point incision over outer prepuce skin. Black arrow indicates redundant inner prepuce.



(c) Ventral view. Incision made & flap raised.



(d) Right lateral view. Incision made & flap raised.

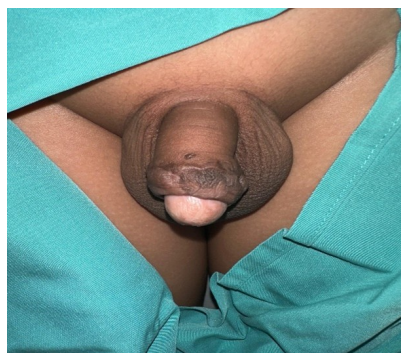
Figure 2



Figure 3. Dorsal View Immediately Post Operation.



Figure 4. Right Lateral View Immediately Post Operation.



(a) Dorsal View Of Penis, Post-Surgery 3 Months Follow Up.



(b) Right Lateral View Of Penis, Post-Surgery 3 Months Follow Up.

Figure 5

Discussion

Secondary phimosis is, indeed, a challenging complication to manage. Once it occurs, the mainstay of treatment remains re-circumcision, which involves a more extensive surgical procedure. However, it is essential to acknowledge that re-circumcision may not always prevent the recurrence of the condition, especially if the underlying cause—such as the initial improper technique or an improperly sized Plastibell—is not addressed. Recurrence is a critical concern because it may lead to repeated scarring, increasing the complexity of future procedures and further damaging tissue integrity.

The clinical pathogenesis of secondary phimosis primarily revolves around the fibrotic healing process following circumcision. Kidger et al. explain that this occurs due to inadequate circumferential foreskin excision, which creates a tension that, over time, forms a fibrotic scar that restricts the foreskin. (2) This results in further complications in the long term, despite the initial success of the circumcision procedure.

Besides Z plasty, elliptical excision and geometric broken line closure, the W-plasty technique has also emerged as a widely recognized method for addressing scar. (3) Its popularity stems from its ability to effectively manage scar tissue and reduce tension around the surgical site. The technique's ability to break up the scar into smaller, more manageable components helps redirect anti-tension lines and prevents the creation of a single, large, rigid scar. (4) Additionally, as Borges highlighted, this technique has advantages in camouflaging the scar within natural skin folds and creases, helping to achieve aesthetically favourable outcomes. (5; 6; 7) As W-plasty is a scar excisional technique resulting in a series of triangular flaps by producing a zig-zag effect. Thus, this technique is only beneficial for patient with adequate remaining outer prepuce skin.

A key aspect of this is ensuring that the initial circumcision is performed with precise surgical technique and using an appropriately sized Plastibell, and ensuring that the ligature is placed securely. (1) One of the major factors that contribute to this is due to inexperienced medical personnel. (8) Prevention is better than a cure. Here, I would like to stress that strengthening policies to ensure only qualified and certified practitioners perform circumcisions can reduce the circumcision complications.

In summary, while secondary phimosis following circumcision is a recognised complication, it can be managed effectively using techniques like W-plasty. However, the most important step remains preventing this condition from occurring in the first place through precise surgical methods and proper post-operative care. Continued research and refinements in surgical techniques and skills will be crucial in ensuring better outcomes for patients undergoing circumcision procedures.

Conclusion

Re circumcision with the W-plasty technique is an alternative in managing secondary phimosis. This technique not only helps to release the cicatricial scar but also prevents further scarring in revision as compared to traditional techniques. However, further randomized controlled studies should be conducted to further justify the outcome of the W-plasty corrective circumcision for secondary phimosis. It is also mandatory to remember that circumcision is a surgical procedure that should be performed by credentialed medical personnel.

Conflict Of Interest

Author declare no conflict of interest and no funding for this study.

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