Clinics in Surgery

Surgical Technique
Published: 03 Aug, 2021

Symmetrical Marking of Neo-Urethral Plate Using U-Shaped Stainless-Steel Wire: A Technical Innovation

Abhinav Singh[1], Malika Singh[2], Rohini Singh[3], RB Singh[4]*

[1]Department of Burns, Plastic and Reconstructive Surgery, Mahatma Gandhi Medical College, Jaipur, India

[2]Department of GI Surgery, Amrita Institute of Medical Sciences (AIMS), Kerala, India

[3]Department of Dermatology, Mahatma Gandhi Medical College, Jaipur, India

[4]Department of Burns and Plastic Surgery, Postgraduate Institute of Medical Sciences (PGIMS) and University of Health Sciences, India

Abstract

Purpose: Marking a neo-urethral plate of uniform width.

Aims and Objective: To re-construct a uniform diametered neo-urethra.

Material and Methods: An autoclaved 16-gauge straightened stainless-steel wire was bent in U-shape with both its limbs 15-mm apart. The U-shaped wire was dipped in methylene blue dye and then lightly and precisely pressed on an optimally stretched, stabilized and wrinkle-free neo-urethral plate of a dorsally flexed penile shaft.

Result and Observations: Marking of neo-urethral plate was symmetrical and time saving.

Conclusion: The technique is easy, safe and economical.

Keywords: Neo-urethral plate; Tubularization; Stainless-steel wire

OPEN ACCESS

Correspondence:
Abhinav Singh, Department of Burns, Plastic and Reconstructive Surgery, Mahatma Gandhi Medical (MGM) College, Jaipur, Rajasthan, House No. 1155, Sector 1, HUDA, Rohtak-124001, Haryana, India, Tel: +91-9896251114; E-mail: abhi2889@gmail.com

Received Date: *12 Jul 2021*
Accepted Date*: 27 Jul 2021*
Published Date*: 03 Aug 2021*

Citation:
Singh A, Singh M, Singh R, Singh RB. Symmetrical Marking of Neo-Urethral Plate Using U-Shaped Stainless-Steel Wire: A Technical Innovation. Clin Surg. 2021; 6: 3273.

Introduction

Marking of the boundaries of neo-urethral plate with a hand-held skin marking pen is difficult, time consuming and defines an asymmetrical neo-urethral plate of different width at different levels all along the length of a fully developed adult penile shaft, and tubularization of such asymmetrically marked and incised neo-urethral plate would result in re-construction of an unequal diametered neo-urethra to cause turbulence in urinary stream during micturition. Therefore, to achieve a neat, clean and symmetrical marking of the boundaries of neo-urethral plate, the authors have devised an easy, safe, time saving and cost-effective technique of using a commonly available stainless-steel wire.

Material and Methods

An autoclaved 16-gauge straightened stainless-steel wire was taken and bent in a U-shape keeping distance between both of its limbs equal to the requisite width of the neo-urethral plate. In adult hypospadiacs with well-developed penile shaft, the distance between both limbs ranged between 12 mm to 15 mm for re-construction of neo-urethra of adequate diameter for resistance free flow of urinary stream. The penile shaft was dorsiflexed with the help of glans traction suture; the neo-urethral plate was optimally stretched and stabilized with fingers to make it wrinkle-free. The U-shaped wire, dipped in methylene blue dye was lightly and precisely pressed in single go (Figure 1) to result in symmetrical and uniform marking of neo-urethral plate (Figure 2) before its incising and tubularization over a urethral stent. Alternatively, the wire can be stained by India ink, skin marking pen or povidone-iodine solution.

Observations

The technique of using U-shaped stainless-steel wire was easy, safe and quick for symmetrical marking of the boundaries of neo-urethral plate before its tubularization to re-construct uniformly diametered neo-urethra with smooth flow of urinary stream.

Figure 1: U-Shaped methylene blue-stained stainless-steel wire being pressed over the neo-urethral plate in a dorsi-flexed penile shaft of an adult proximal hypospadiac.

Figure 2: Uniform and symmetrical marking of boundaries of the neo-urethral plate before its incising and tubularization to re-construct uniformly diametered neo-urethra.

Discussion

In hypospadias surgery, the stainless-steel wire, silver wire and horse hair have been used in past for re-construction of neo-urethra [1]. Before commencing upon neo-urethroplasty during 2nd stage of hypospadias repair to re-construct uniformly diametered neo-urethra, apart from many other factors, certain minimum requirements are necessary like: (i) The presence of an ideally re-constructed neo-urethral plate in a straightened penile shaft, (ii) uniform and symmetrical marking of the boundaries over the neo-urethral plate of the area to be utilized for re-construction of neo-urethra, (iii) precisely incising the neo-urethral plate, and finally (iii) tubularization of the incised neo-urethral plate by taking equidistant suture bites to achieve the goal of re-constructing an uniformly diametered neo-urethra. To the best of author's knowledge, such technique of marking for symmetrical neo-urethral plate has not been described in literature. Uneven marking over a de-novo or re-constructed urethral plate is expected to result in the formation of un-equal diametered new urethra consequent upon tubularization of so defined urethral plates.

References

1. Hadidi AT. History of hypospadias: Lost in translation. J Pediatr Surg. 2017;52(2):211-7.