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

**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

**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.
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