

## DOES INTRAOPERATIVE INDIGO CARMINE SOLUTION AT THE TIME OF ARTIFICIAL URINARY SPHINCTER PLACEMENT PREVENT EARLY URETHRAL CUFF EROSION?

### Hypothesis / aims of study

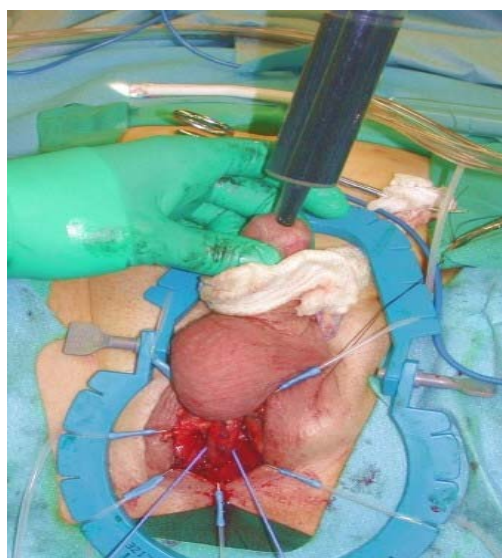
Urethral erosion following artificial urinary sphincter (AUS) placement is a serious complication requiring cuff or device removal. Erosion in the immediate post-operative period is hypothesized to be secondary to an unrecognized iatrogenic urethral injury [1]. Intra-urethral injection of Indigo Carmine Solution (ICS), a blue dye, following urethral mobilization should identify intra-operative urethrotomy and prevent early post-operative cuff erosion. We examine the efficacy of this step in preventing early post-operative AUS cuff erosion (defined as less than 6 months from AUS placement).

### Study design, materials and methods

With IRB approval, a retrospective review was completed of all men undergoing AUS (AMS 800 device) insertion at our institution between January 2000 and December 2003 for stress incontinence secondary to radical prostatectomy (RP). Prior radiotherapy (RT) was noted if present. Operative reports were examined for use of intra-operative ICS and evidence of urethral injury. Post-operative course was reviewed for evidence of early cuff erosion. All patients were followed a minimum of 6 months post-operatively.

**SURGICAL TECHNIQUE:** Following complete urethral mobilization, the Foley catheter was removed and 60 cc of ICS [200 cc normal saline: 1 ampule Indigo Carmine] was injected per meatus into the urethra. White surgical sponges placed circumferentially around the bulbar urethra and visual inspection for blue staining/drainage were performed to detect urethral injury [Figure 1].

**FIGURE 1:** Injection of Indigo Carmine solution intra-operatively



### Results

67 men underwent AUS placement during the investigative period [Table 1]. 38 men (mean age 73.3 years) underwent intra-operative ICS injection following urethral mobilization. 29 men (mean age 76.6 years) did not get post-dissection ICS injection. ICS

identified 1 intra-operative urethral injury. No urethral injuries were noted in the control group. There were no intra-operative complications associated with intra-urethral ICS injection.

**Table 1:** Characteristics of AUS patients

	<i>ICS Group</i>	<i>Control Group</i>
<b>Number of patients</b>	38	29
<b>Mean Age</b>	73.2	76.6
<b>Previous Radiation</b>	13	7
<b>Cuff Sizes</b>		
<b>4.0 cm</b>	15	8
<b>4.5 cm</b>	21	20
<b>5.0 cm</b>	2	1
<b>Reservoir Pressure</b>		
<b>61-70 cm H<sub>2</sub>O</b>	31	28
<b>51-60 cm H<sub>2</sub>O</b>	7	1

Interpretation of results

The ICS group suffered 3 early urethral erosions (1/3 with previous RT). All three had negative urine cultures. The control group suffered one early urethral erosion (patient had prior RT / 4.5 cm cuff / 61-70cmH<sub>2</sub>O reservoir / negative urine culture).

Concluding message

Intra-operative post urethral dissection ICS injection is easy, safe, and able to identify iatrogenic urethral injury. However, the use of intra-operative ICS injection did not decrease the incidence of early cuff erosion in our experience. This may call into question the existence of early urethral cuff erosion as a separate entity not related to infection or iatrogenic urethrotomy.

**REFERENCES:**

1. Review of the complications and results of implantaion of the AMS artificial urinary sphincter. Eur Urol 1999; 35: 36-44.