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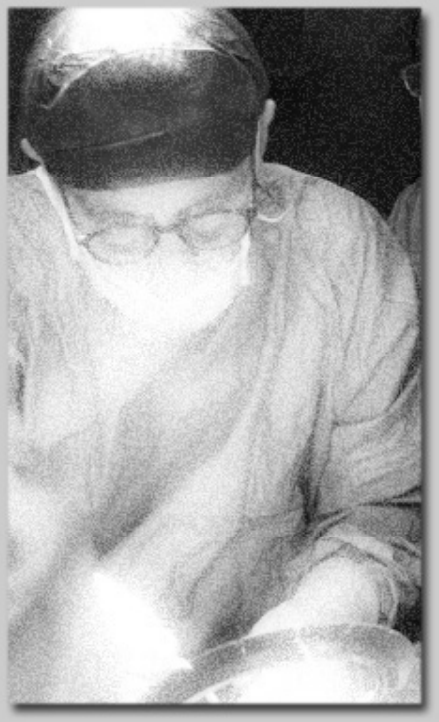

GUIDO BARBAGLI, M.D.

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Thank you!

Society of Government Service Urologists

58th Annual Kimbrough Seminar

January 16 - 21, 2011
Sheraton Seattle Hotel
Seattle, Washington

Andrew C. Peterson

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Thank you!

Jack McAninch

George D. Webster

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Thank you!

Steven B. Brandes

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Thank you!

In conclusion, I like to thanks all the

American Urologists involved in the Reconstructive Urethral Surgery for the teaching, support, encouragement and new idea and suggestions they provided me in the last 15 years.

Without your incredible support my career brief newer was born and developed.

Guido Barbagli

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Bulbar urethroplasty

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Bulbar urethra

Basically, the surgical technique for the repair of bulbar urethral strictures is selected according to the stricture etiology and site

(distal vs proximal)

Surgical technique according to etiology of bulbar urethral stricture

Trauma → **End-to-end anastomosis**
Augmented anastomotic repair

Instrumentation
Catheter
Infection
Other
→ **Oral mucosa onlay**

Long-Term Followup of Bulbar End-to-End Anastomosis: A Retrospective Analysis of 153 Patients in a Single Center Experience

Guido Barbagli, Michele De Angelis, Giuseppe Romano and Massimo Lazzeri*

From the Center for Urethral Reconstructive Surgery (GB), Unità Operativa Urologia, Ospedale San Donato (MDA, GR), Arezzo, and Department of Urology, Santa Chiara-Firenze, Florence (ML), Italy

Purpose: We performed a retrospective evaluation and statistical analysis of outcome in patients who underwent bulbar end-to-end anastomosis.

Materials and Methods: We reviewed 153 patients with an average age of 39 years who underwent bulbar end-to-end anastomosis between 1988 and 2006. Mean followup was 68 months. Stricture etiology was unknown (62.7%), catheter (14.4%), blunt perineal trauma (11.7%), instrumentation (9.8%), radiotherapy (0.7%) and infection (0.7%). Stricture length was 1 to 2 cm (in 59.5%), 2 to 3 cm (37.9%), 3 to 4 cm (1.9%) or 4 to 5 cm (0.7%). A total of 90 patients (59%) underwent dilation, internal urethrotomy, urethroplasty or multiple procedures before being referred to our center. Clinical outcome was considered a treatment failure when any postoperative instrumentation was needed. The prevalence of postoperative sexual dysfunction was investigated using a nonvalidated questionnaire.

Results: Of 153 cases 139 (90.8%) were successful and 14 (9.2%) were treatment failures. Treatment failure was managed with urethrotomy in 9 cases, end-to-end anastomosis in 2, buccal mucosal graft urethroplasty in 1 and 2-stage repair in 2. Of 14 cases of failure 12 had a satisfactory final outcome, 1 is still waiting for the second stage of urethroplasty and 1 underwent definitive perineostomy. There were 14 patients (23.3%) who experienced ejaculatory dysfunction, 1 (1.6%) a cold glans during erection, 7 (11.6%) a glans that was neither full nor swollen during erection and 11 (18.3%) had decreased glans sensitivity. No patients complained of penile chordee or impotence.

Conclusions: Bulbar end-to-end anastomosis has a success rate of 90.8%. Most patients were satisfied with the surgical outcome despite postoperative complications such as ejaculatory dysfunction, a glans that was neither full nor swollen during erection, or decreased penile sensitivity.

Key Words: urethra; urethral stricture; anastomosis, surgical; treatment outcome;

J Urol 2007; 178:2470-2473

Questionnaire to investigate sexual dysfunction after bulbar end-to-end anastomosis

Changes in Ejaculation

Did you complain of ejaculation disorders after the surgery?

Yes
No

Did you recognize changes in ejaculation after the surgery comparing it with your previous status?

Yes
No

Does ejaculation occur with difficult stream?

Yes
No

If Yes, what is the stream like?

No stream
Very poor spontaneous stream
The stream occurs only by manually compressing the perineum

Is the ejaculation difficulty present:

Always
Sometimes
Seldom

Did you have negative changes in the relationship with your partner due to difficult ejaculation?

Yes
No

Did you have children after the surgery?

Yes
No

six questions to investigate ejaculatory disorders

J Urol 2007; 178:2470-2473

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Neurovascular Penile Disorders

Did you complain of penile erection disorders after the surgery?

Yes
No

Does your glans fully swell during erection?

Yes
No

If No:

Glans is not swollen
Glans is partially swollen
Glans is fully swollen at the beginning of erection, but it was not maintained ully swollen throughout the sexual activity

Did you have negative changes in your sexual activity due to this problem?

Yes
No

If Yes, what kind of problems did you recognize?

Psychological problems
Problems during vaginal intercourse
Other minor problems

Did you recognize a change in penile sensitivity after surgery?

Yes
No

If Yes, where did you localize sensitivity changes?

In the glans
In penile skin
In distal penile shaft
Including all penile shaft

What was the penile sensitivity like after surgery?

Decreased
Increased
Not specifically altered

Was the penile sensitivity changed in relation to:

Touch
Cold/hot
All stimulus

During the erection do you complain of cold glans?

Yes
No

Did you have negative changes in your sexual activity due to this problems?

Yes
No

seven questions to investigate neuro-vascular penile disorders

J Urol 2007; 178:2470-2473

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Final assessment of surgery

Are you satisfied of surgical outcome and what is your judgment of final results?

1. Not satisfied
2. Poor satisfied
3. Satisfied
4. Very satisfied

1. Negative
2. Poor
3. Good
4. Excellent

If your answer was 1 or 2

Is it because you did not improve urinary function?
Is it because your sexual activity was worsened?

Would you repeat the surgery?

Yes
No

If No, why?

Due to postoperative pain
Due to psychological problems
Because the outcome was different from what I foresaw

Two questions to investigate patient satisfaction

J Urol 2007; 178:2470-2473

This non-validated questionnaire was administered to 60 out of 153 patients who underewent bulbar end-to-end anastomosis, according to the following inclusion criteria:

- ❖ **Age 20 to 50 years old**
- ❖ **No diabetes or vascular diseases**
- ❖ **No previous failed open urethroplasty**
- ❖ **No further surgery required after the anastomosis**

J Urol 2007; 178:2470-2473

Results

12 (20%) patients showed decreased ejaculation force.

11 (18.3%) patients complained of decreased sensitivity of the glans or distal penile shaft.

7 (11.6%) patients complained of a glans that was neither full nor swollen during erection.

2 (3.3%) patients showed ejaculation was possible only by manually compressing the perineum at the level of the urethral bulb.

1 (1.6%) patient had a cold glans during erection.

J Urol 2007; 178:2470-2473

Results

19/60 patients (31.6%) showed minor sexual dysfunctions

14/60 patients (23.3%) showed ejaculatory dysfunction

2/60 (3.3%) patients declared that they were dissatisfied with the outcome of surgery

J Urol 2007; 178:2470-2473

Evaluation of the result after bulbar end-to-end anastomosis

objective

subjective

Clinical assessment

Uroflowmetry

Urethrography

Urethral sonography

Urethroscopy

90.8% success

Questionnaire

31.6% sexual dysfunctions

23.3% ejaculatory dysfunction

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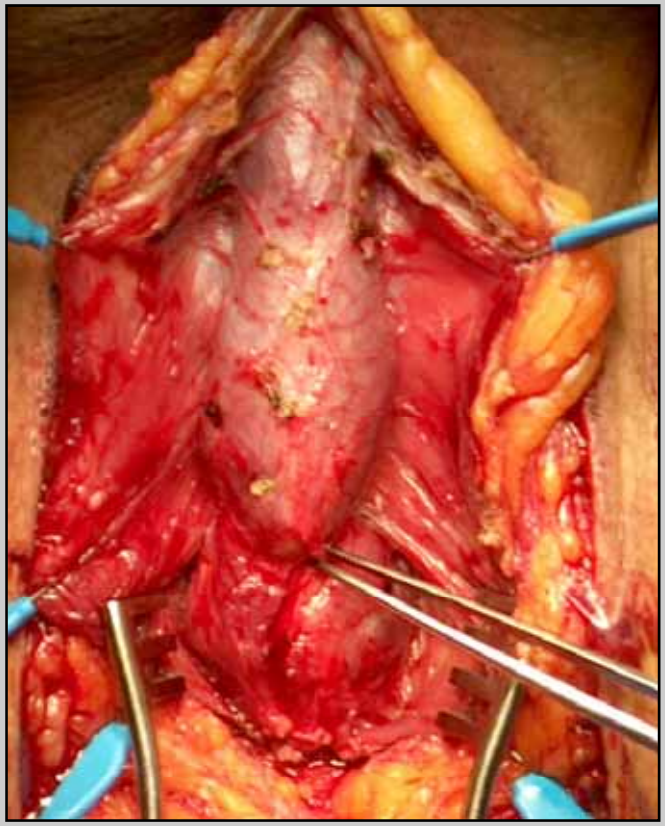
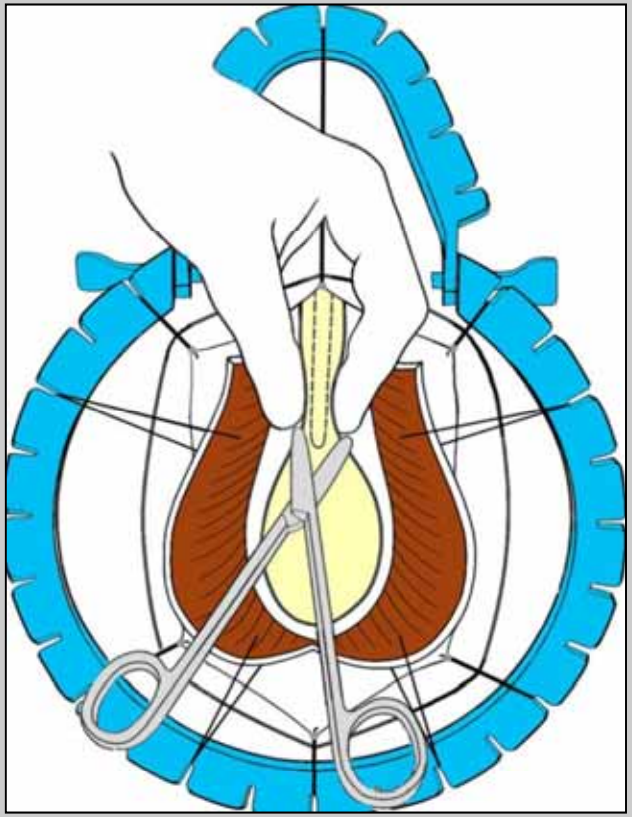
According to the result of this questionnaire we decide to change our clinical approach to bulbar urethral stricture:





We transect the urethra only in traumatic stricture

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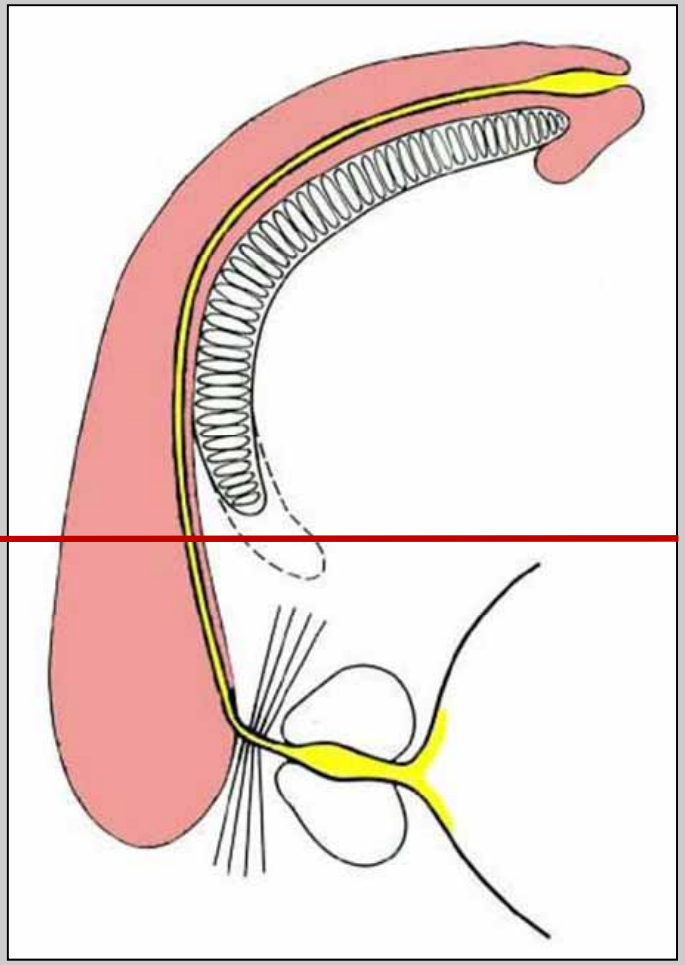
Surgical technique according to site of bulbar urethral stricture

Distal

Dorsal onlay



Proximal

Ventral onlay

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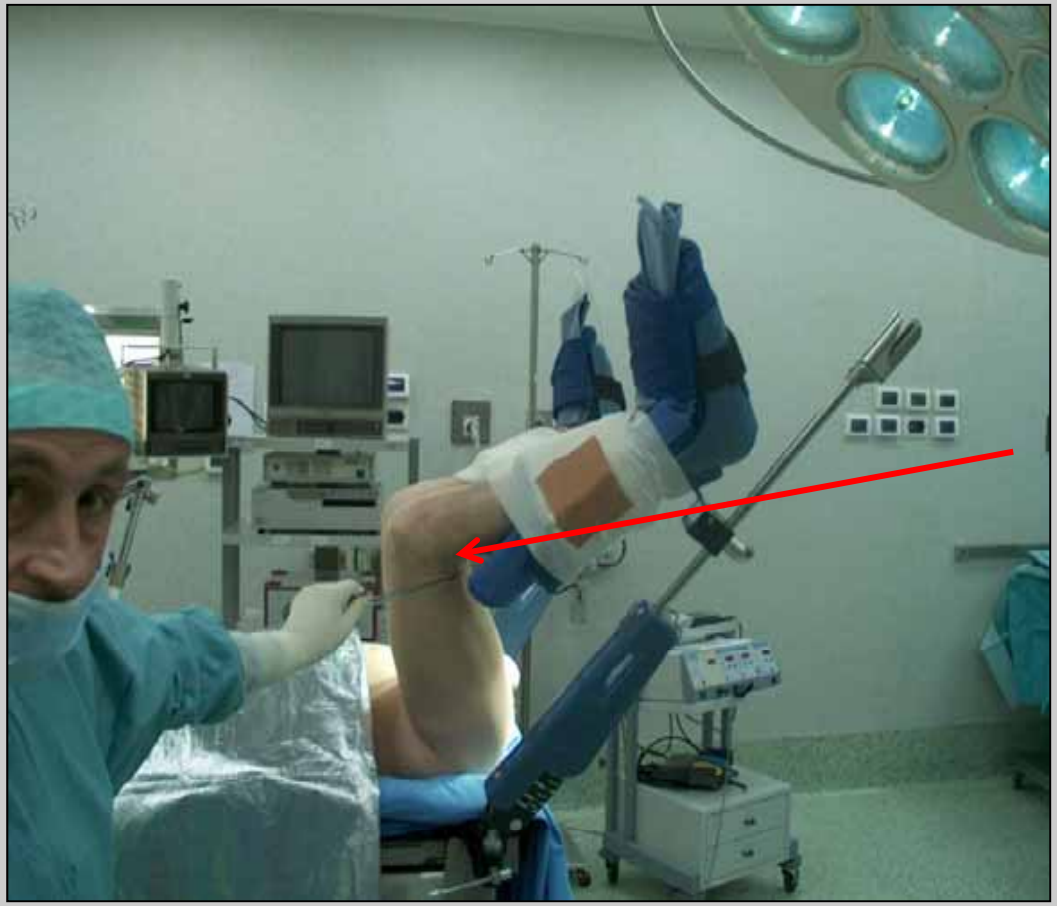
Preparation of the patient for bulbar urethroplasty

Simple lithotomy position

Preparation of the patient for bulbar urethroplasty



Allen stirrups

Preparation of the patient for bulbar urethroplasty

Sequential inflatable compression sleeves

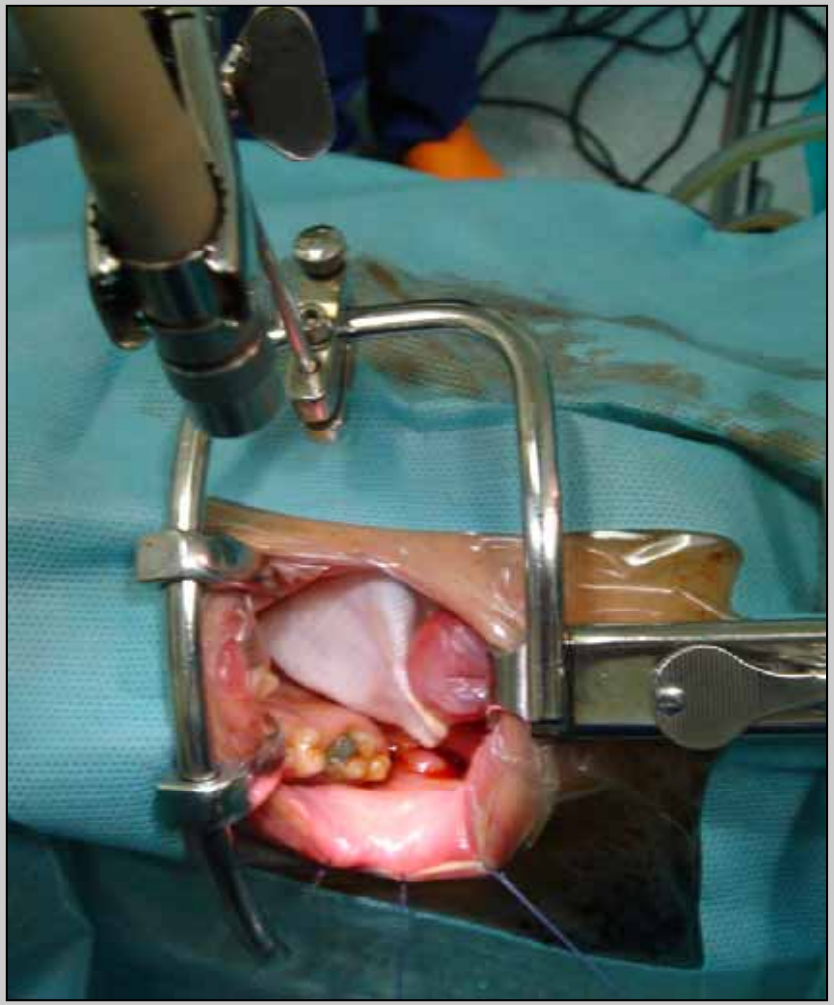
Two surgical teams work simultaneously

McAninch – San Francisco - USA

Two sets of surgical instruments

Oral mucosa

Urethroplasty



Appropriate mouth retractor with its own light

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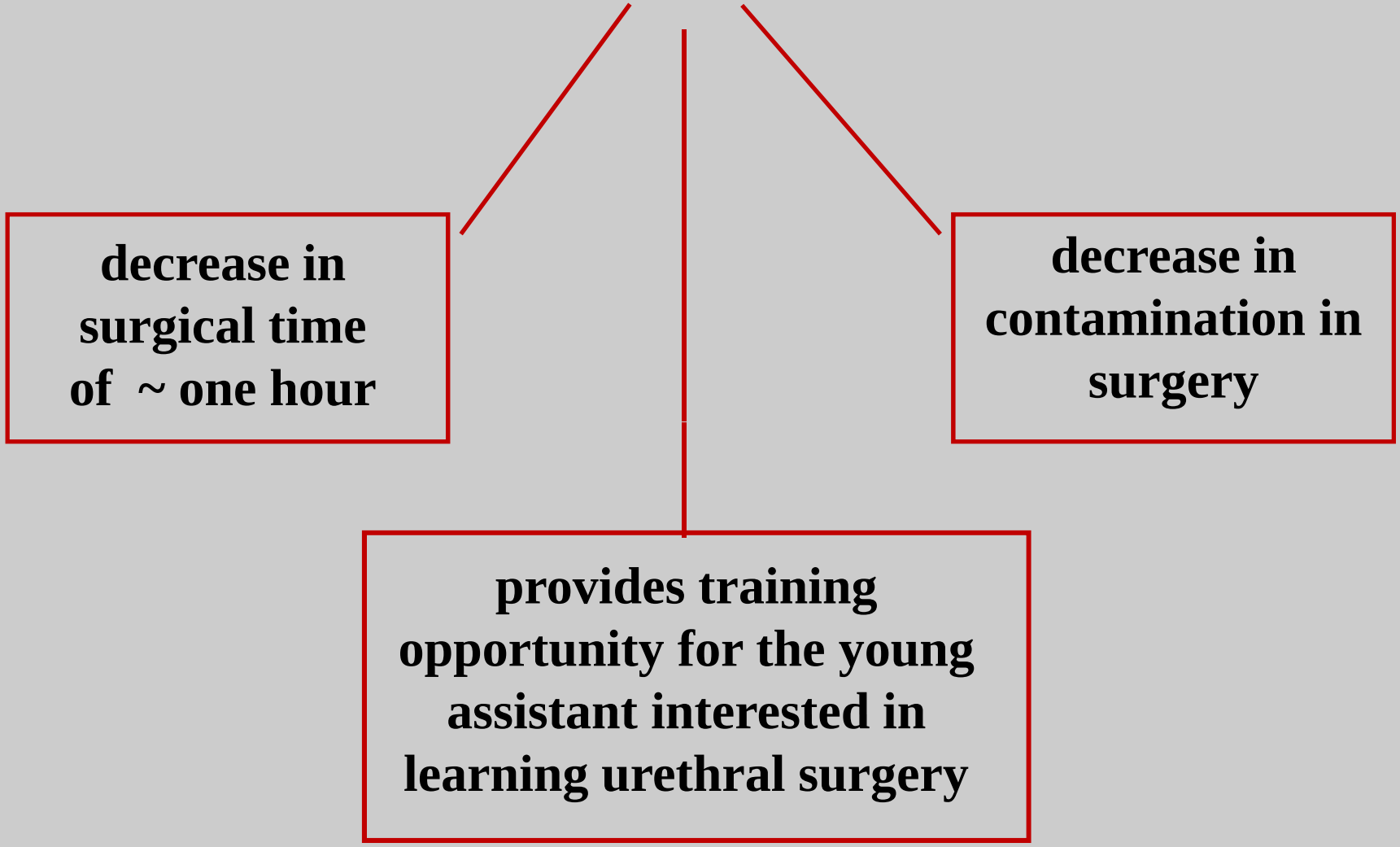
Only one assistant is needed to harvest the oral graft

Advantages of the double team



Harvesting the oral mucosa

Surgical technique

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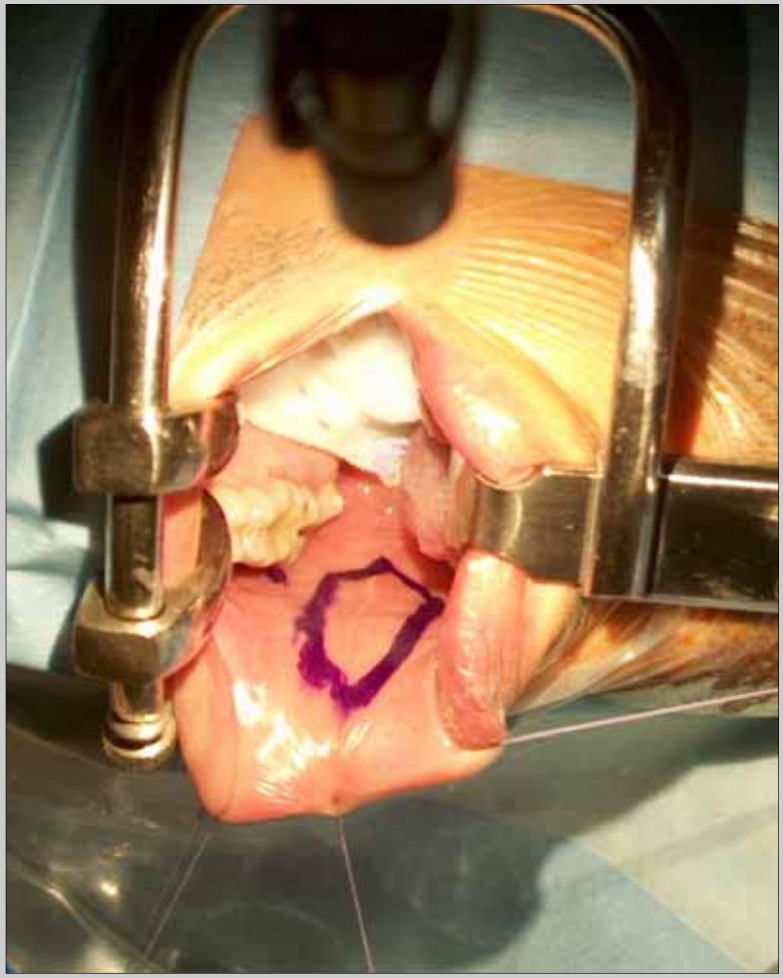
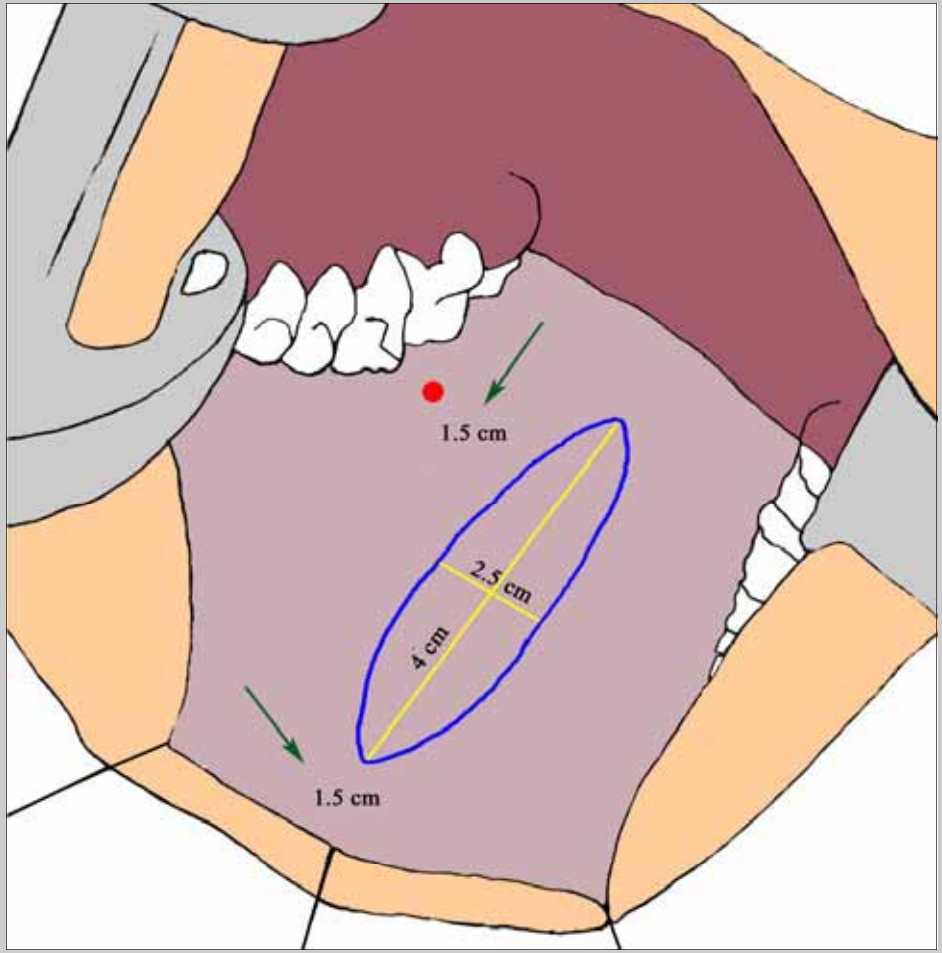
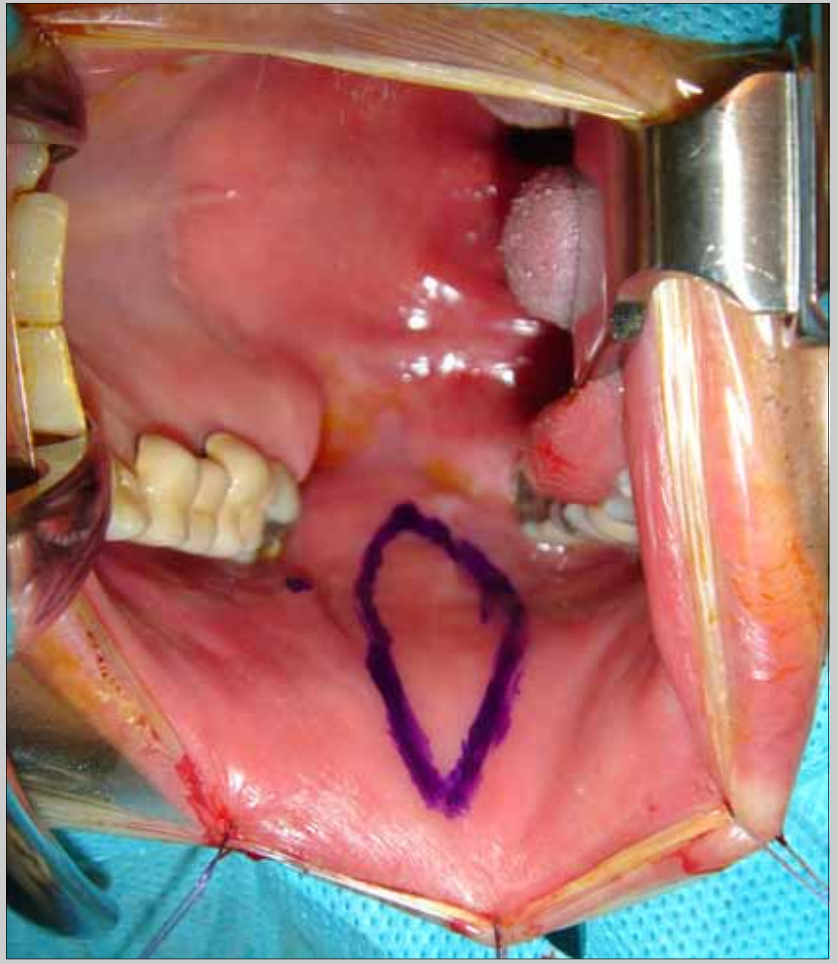
Harvesting oral mucosal graft from the cheek



Surgical steps

The patient is intubated through the nose, allowing the mouth to be completely free





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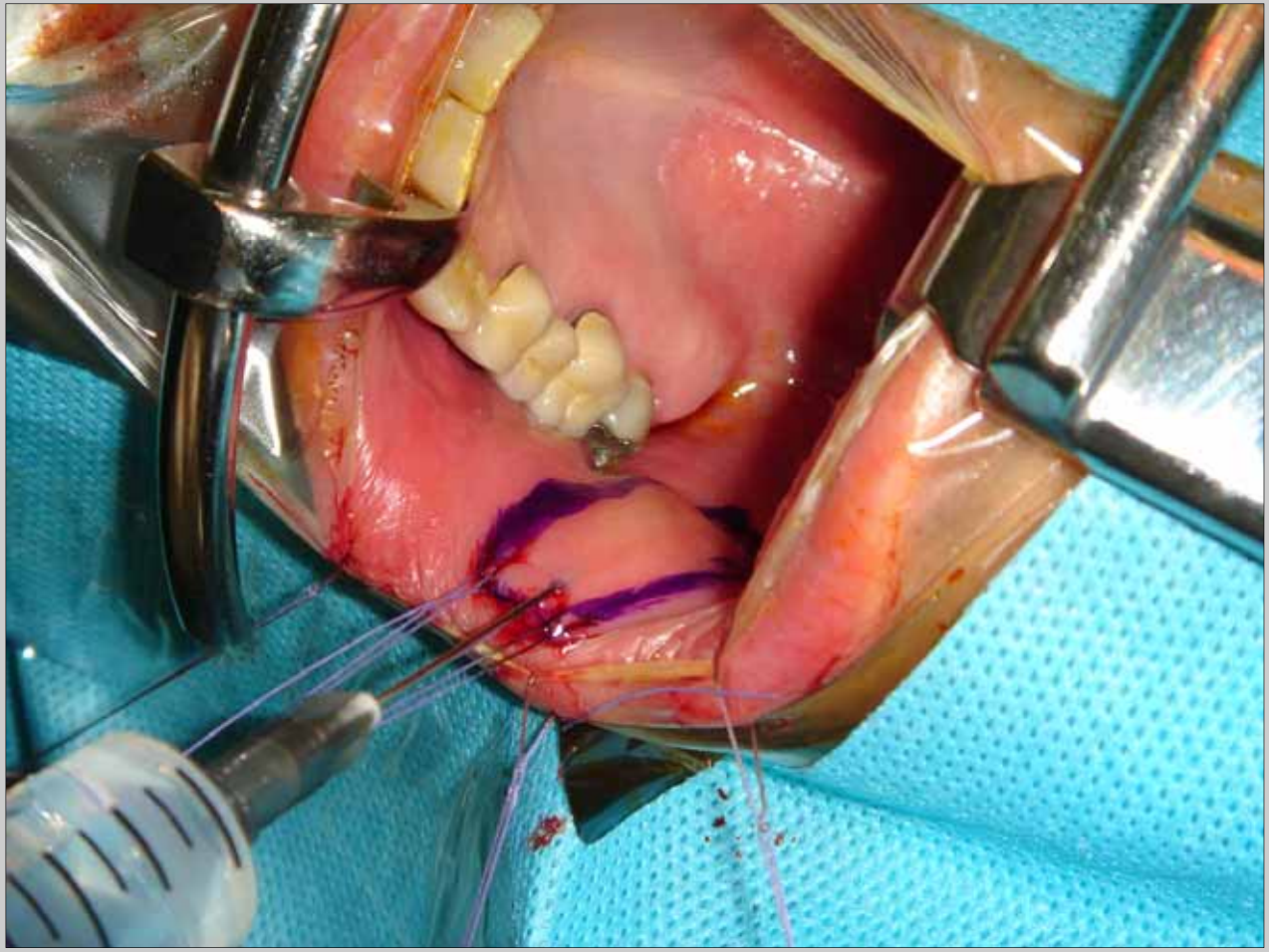
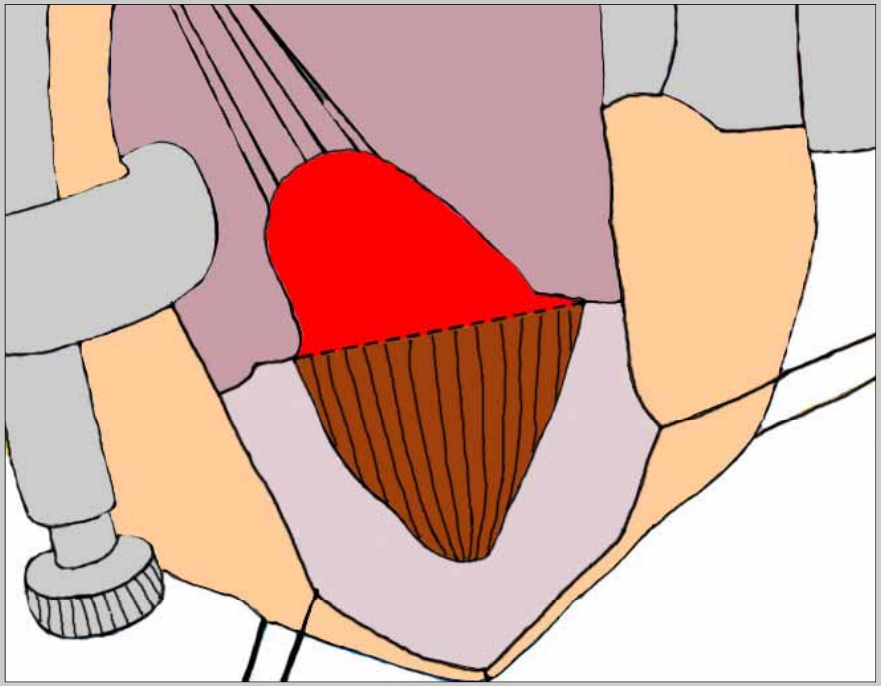
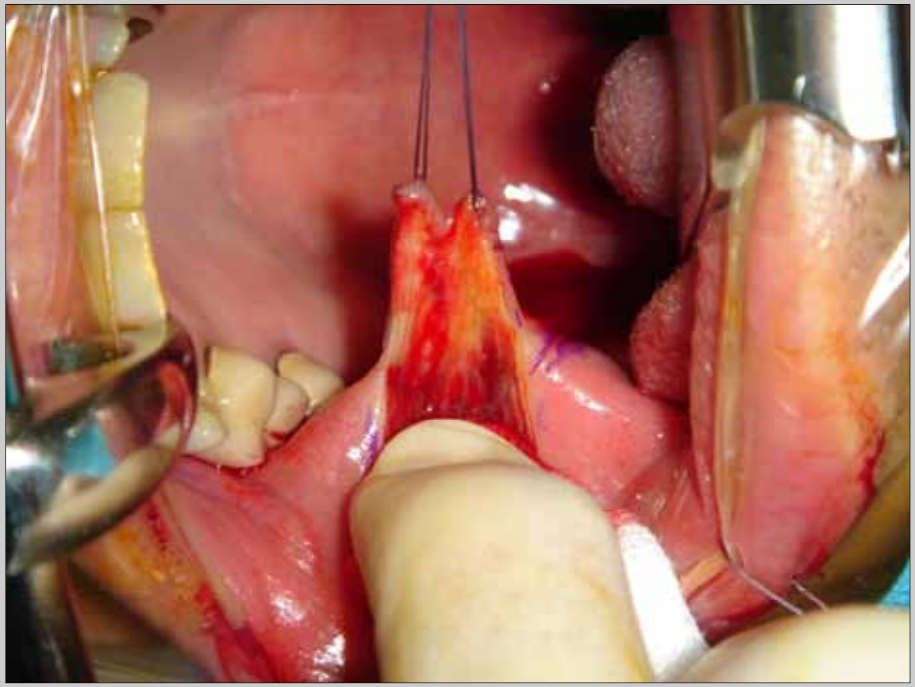


Lidocaine HCL 1% with epinephrine (1:100,000)





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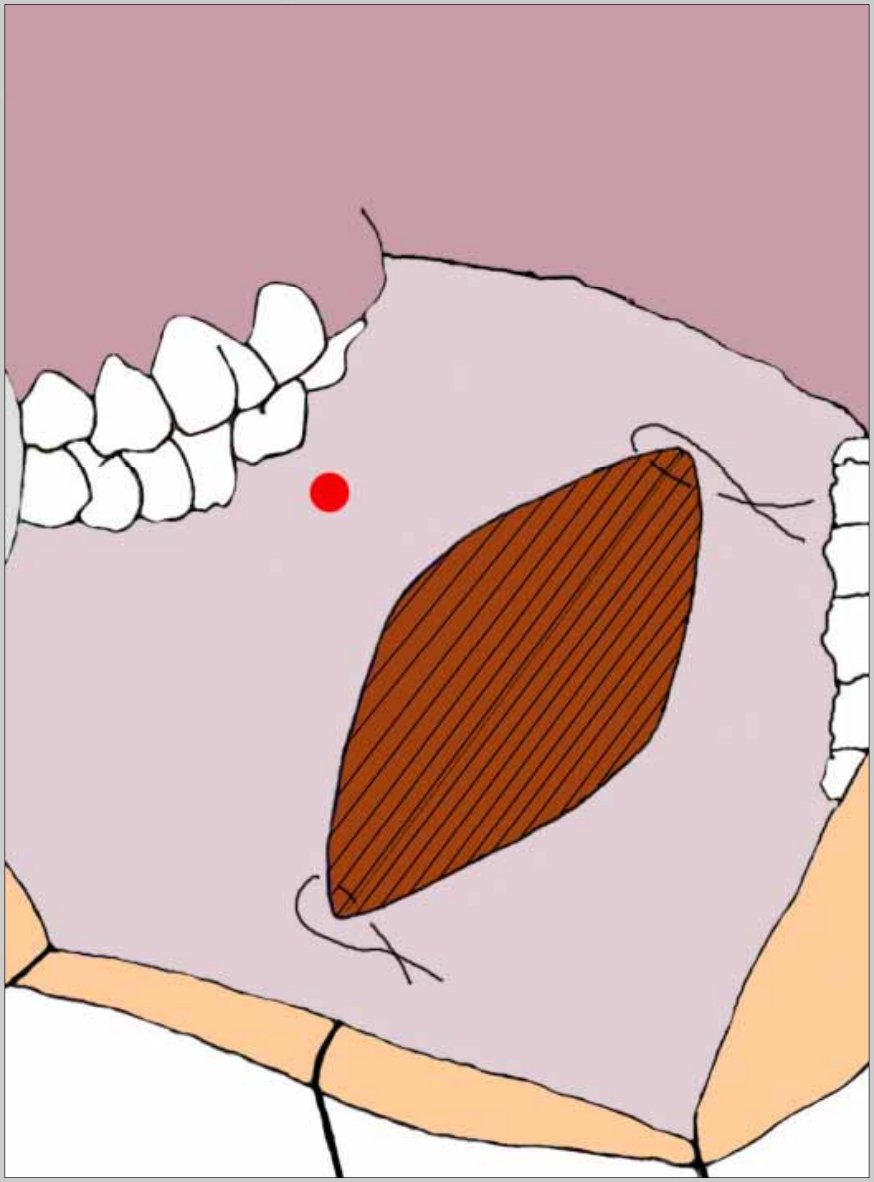

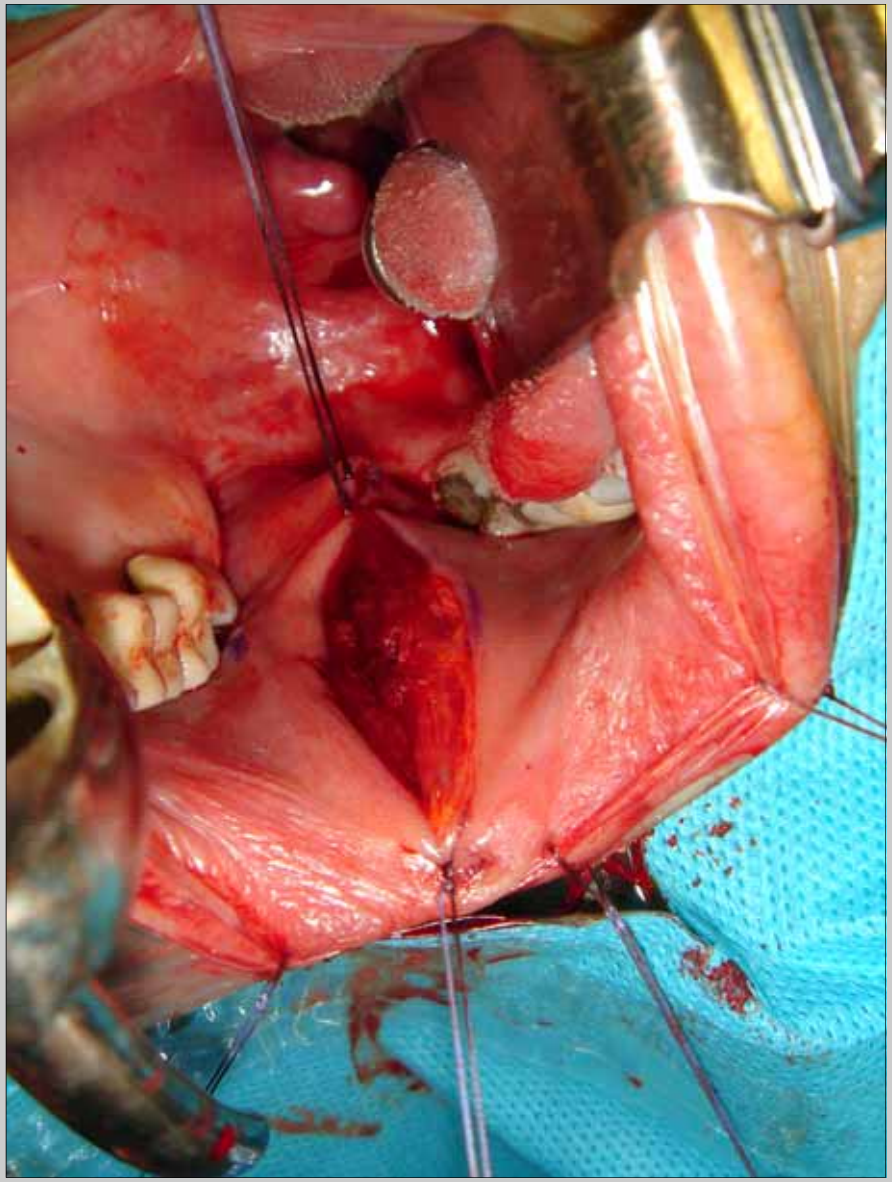

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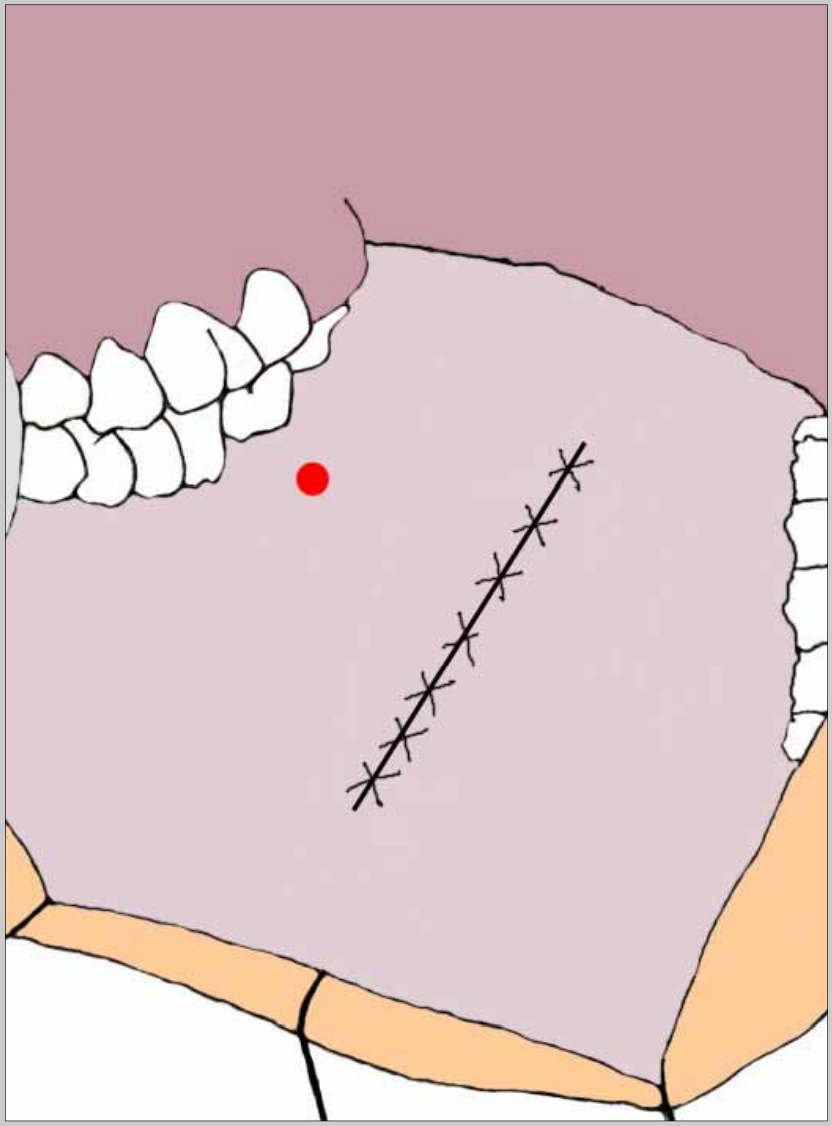

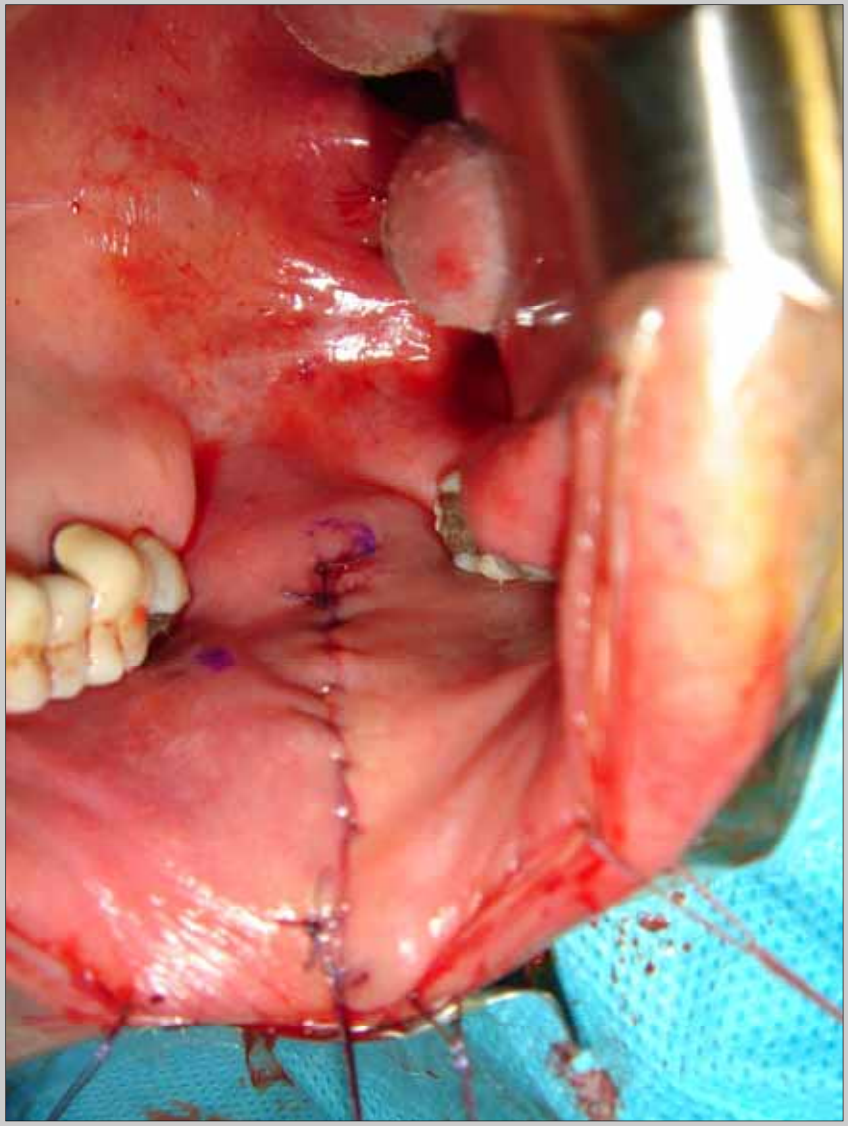

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4 cm

6 cm

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Morbidity of oral mucosa graft harvesting from a single cheek

Barbagli G. et al, Eur Urol 2010; 58: 33-41

Patient satisfaction

“ Would you undergo oral mucosa graft harvesting using this technique again? ”

Yes : 98% of patients

No : 2% of patients

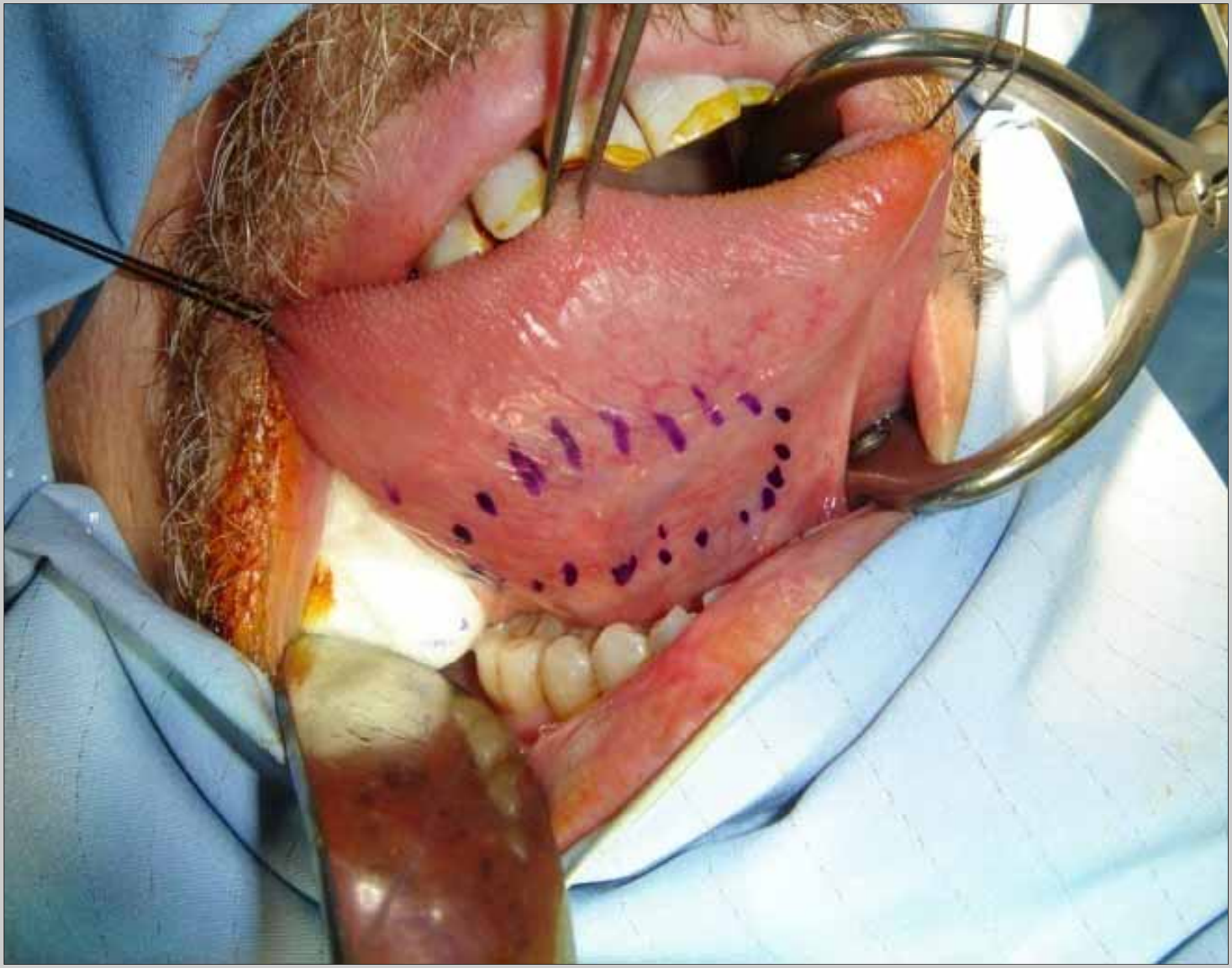
Barbagli G. et al, Eur Urol 2010; 58: 33-41

Harvesting oral mucosal graft from the tongue

Surgical steps

Wharton’s duct

Lingual nerve



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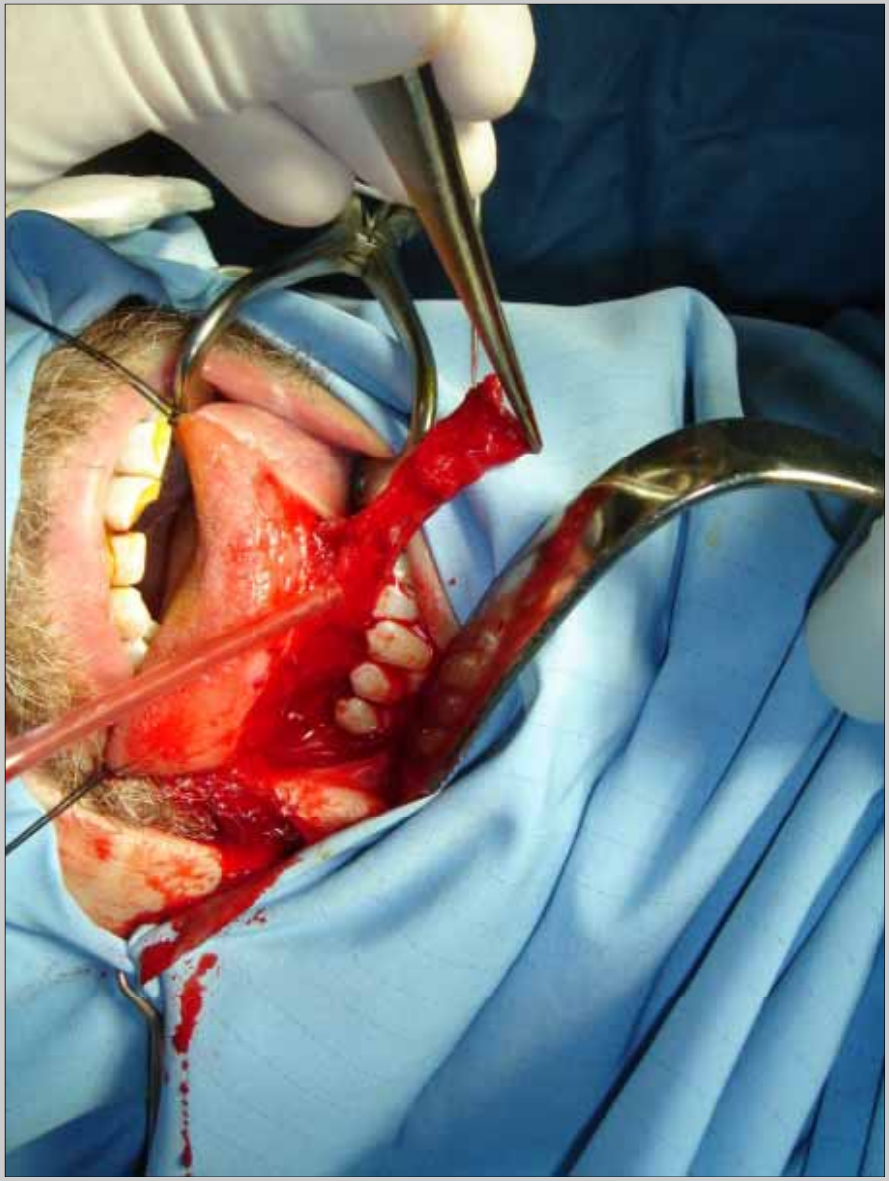

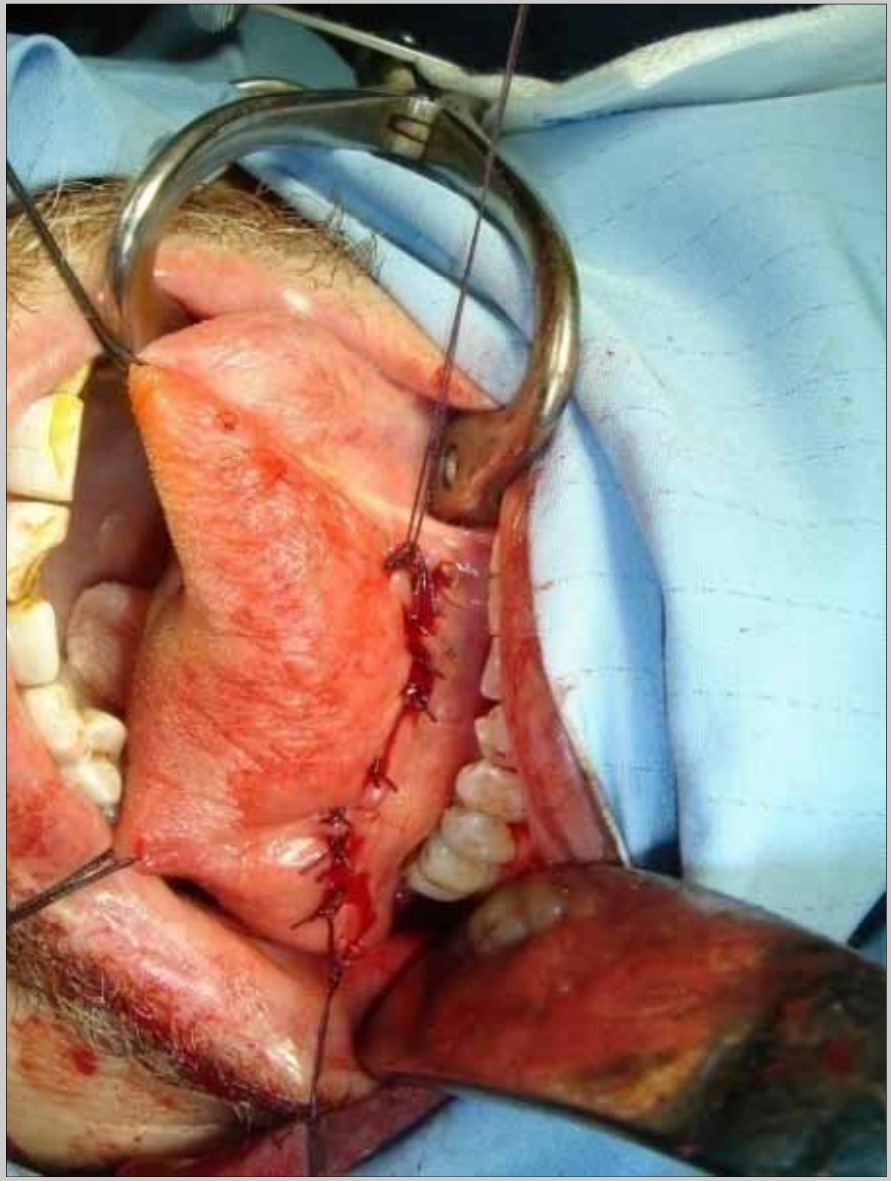

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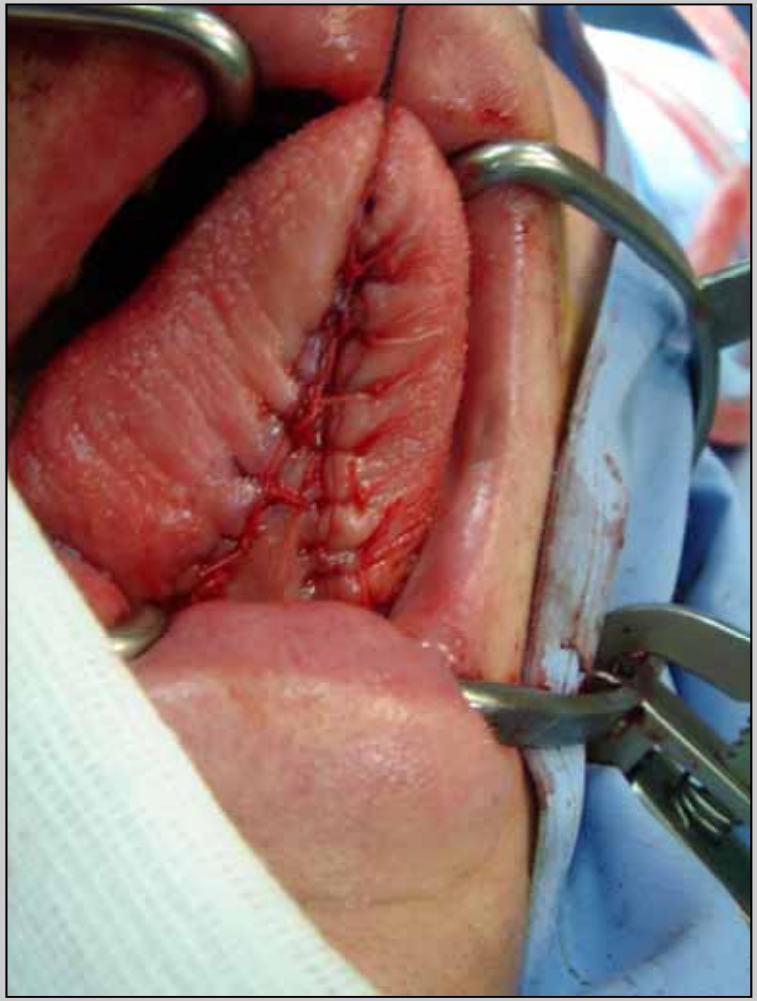


Double grafts harvesting

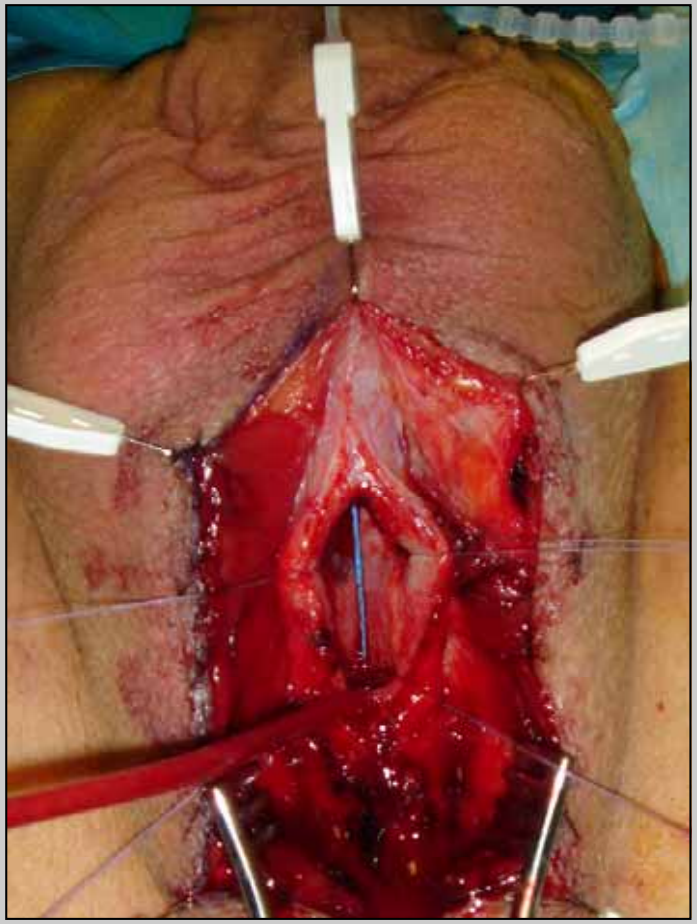
The tongue represents the best alternative to the cheek

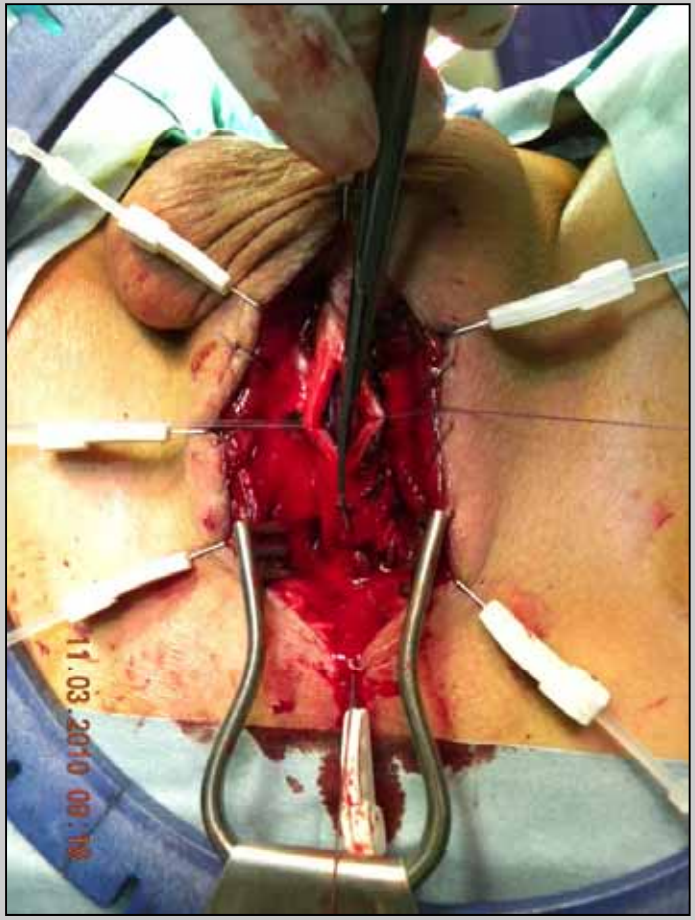
Preparation of the patient for bulbar urethroplasty

Pre-operative urethroscopy

Insert Sensor guide wire

Preparation of the patient for bulbar urethroplasty





Insert Sensor guide wire

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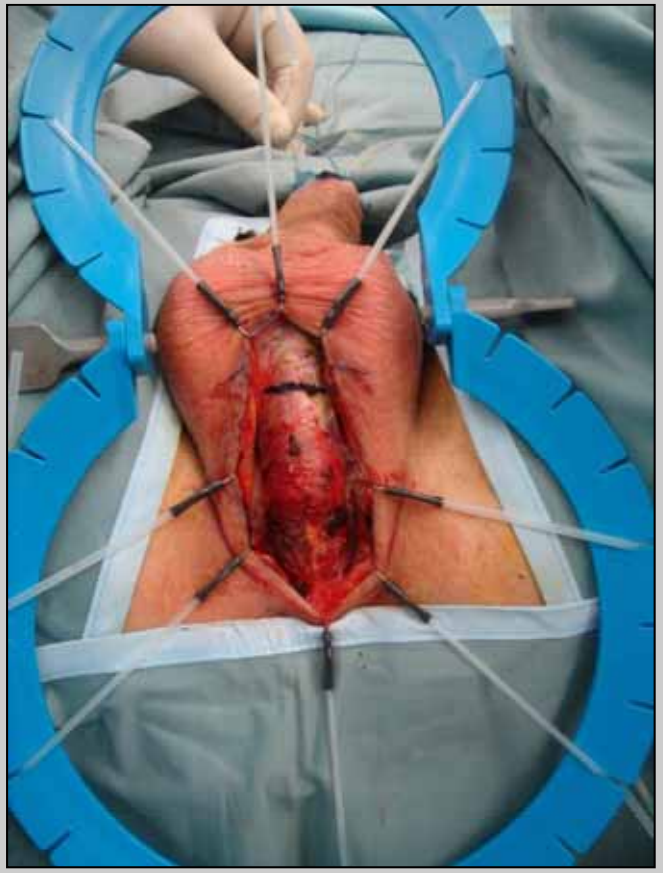
Preparation of the patient for bulbar urethroplasty

Inject methylene blue inside the urethra

(G. Webster)

Preparation of the patient for bulbar urethroplasty



Calibrate the distal urethra and identify the distal stop

1 - 2 cm traumatic bulbar urethral stricture

End-to-end anastomotosis

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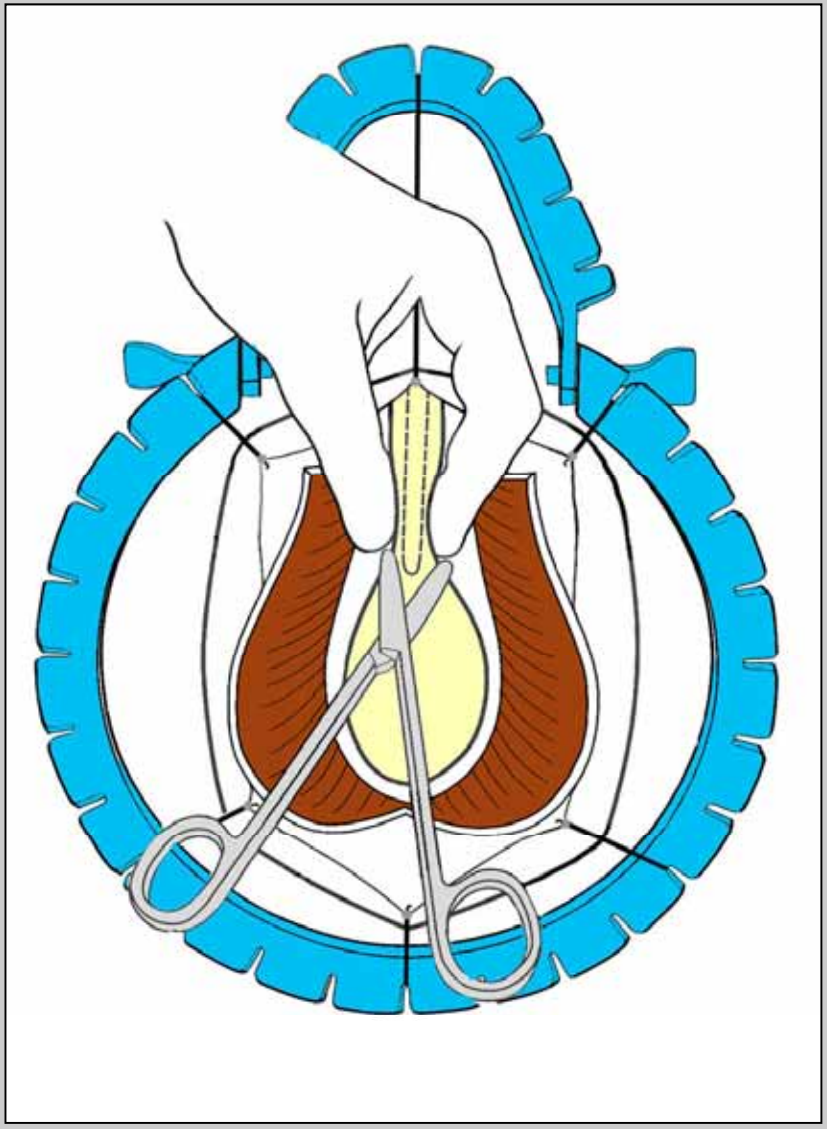

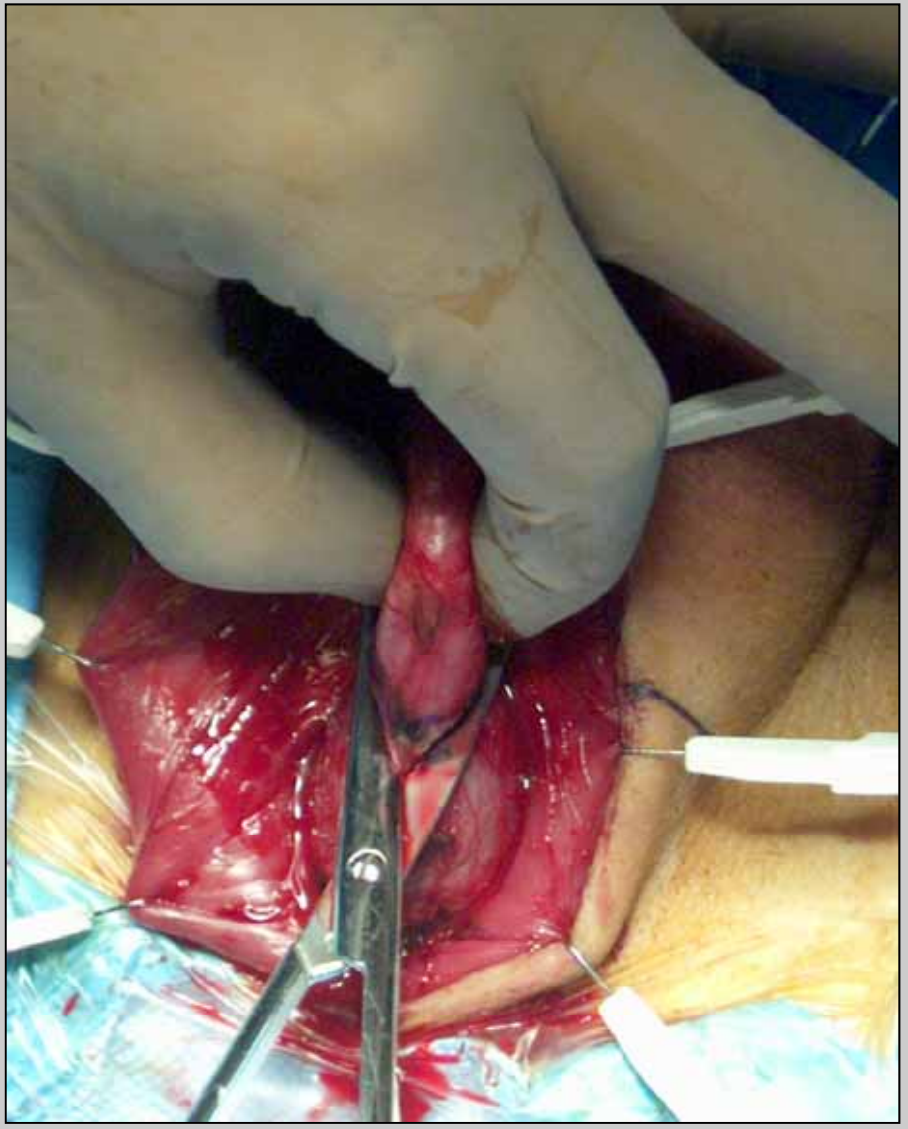

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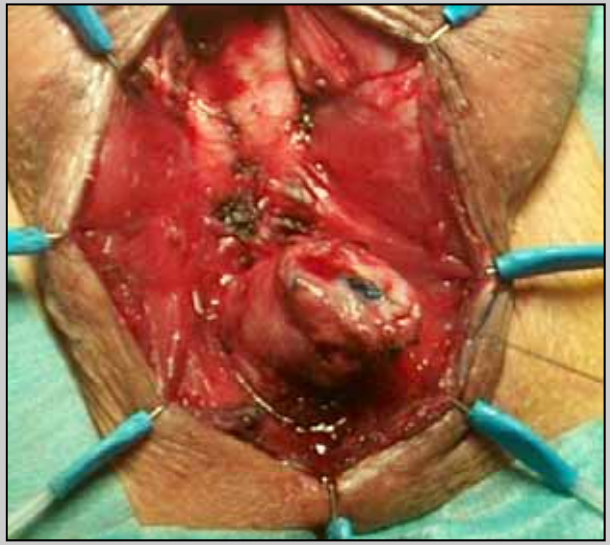
distal end



proximal end

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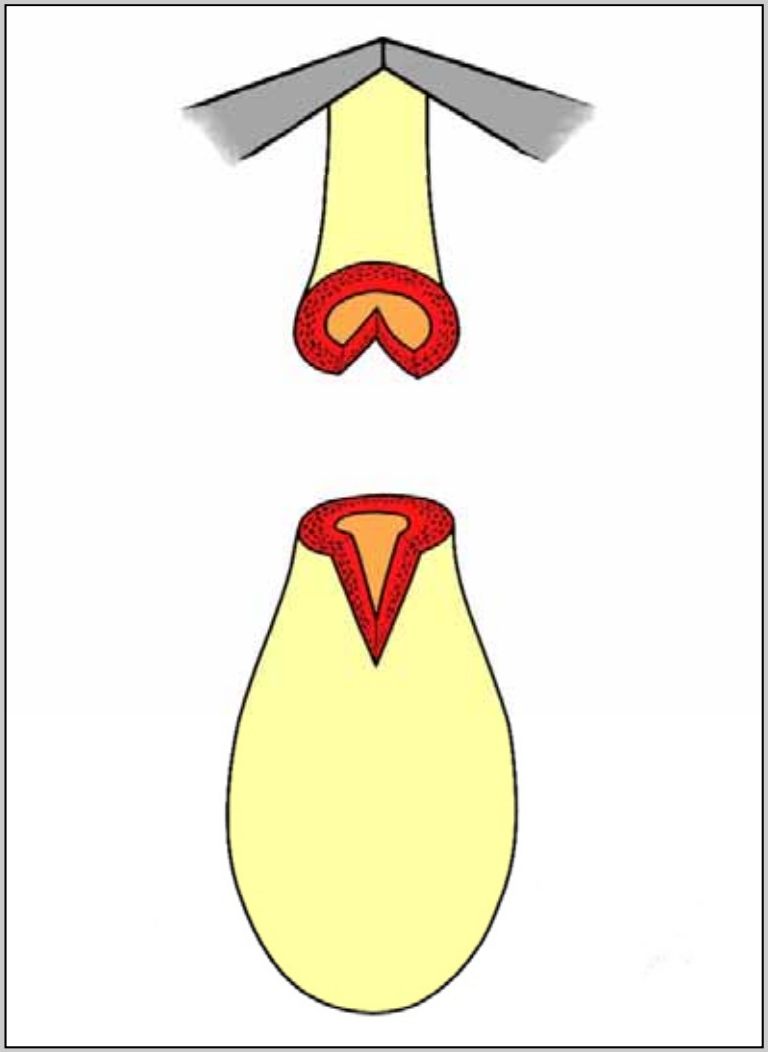

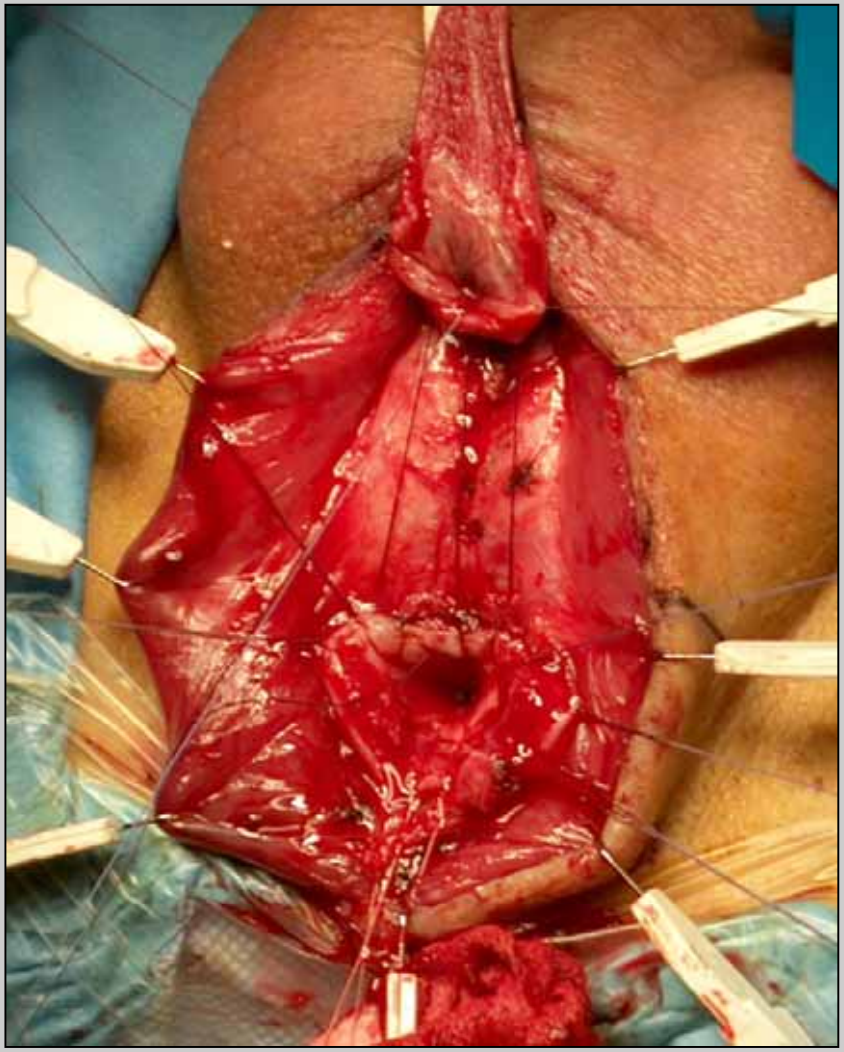

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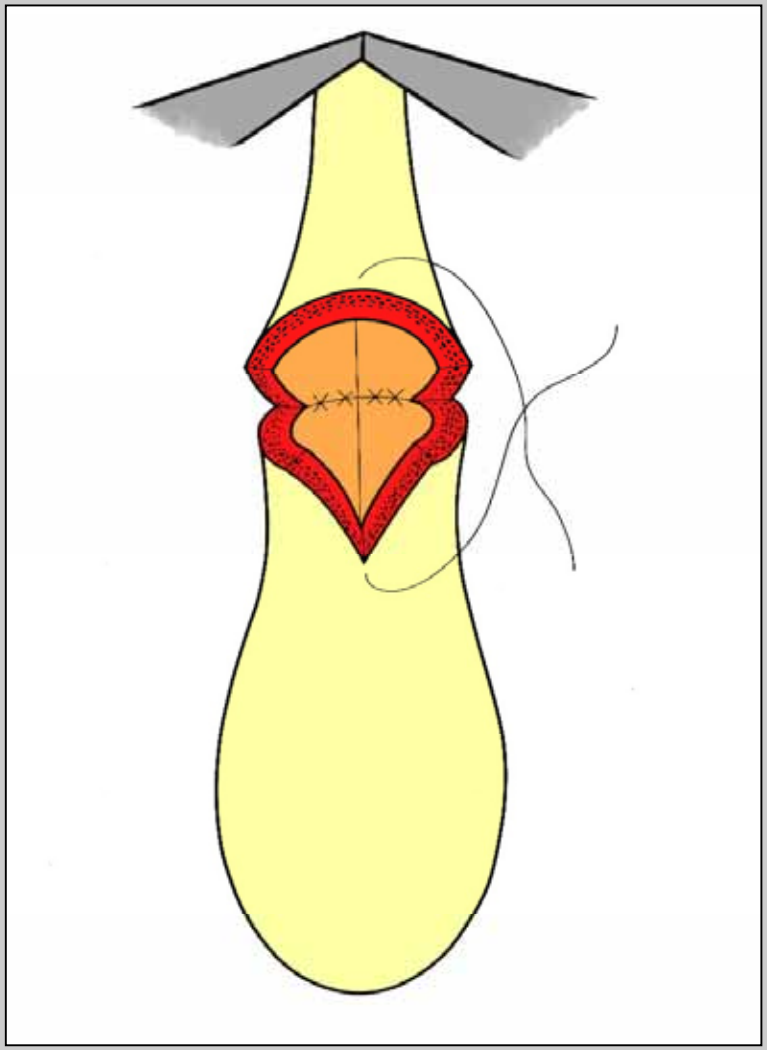

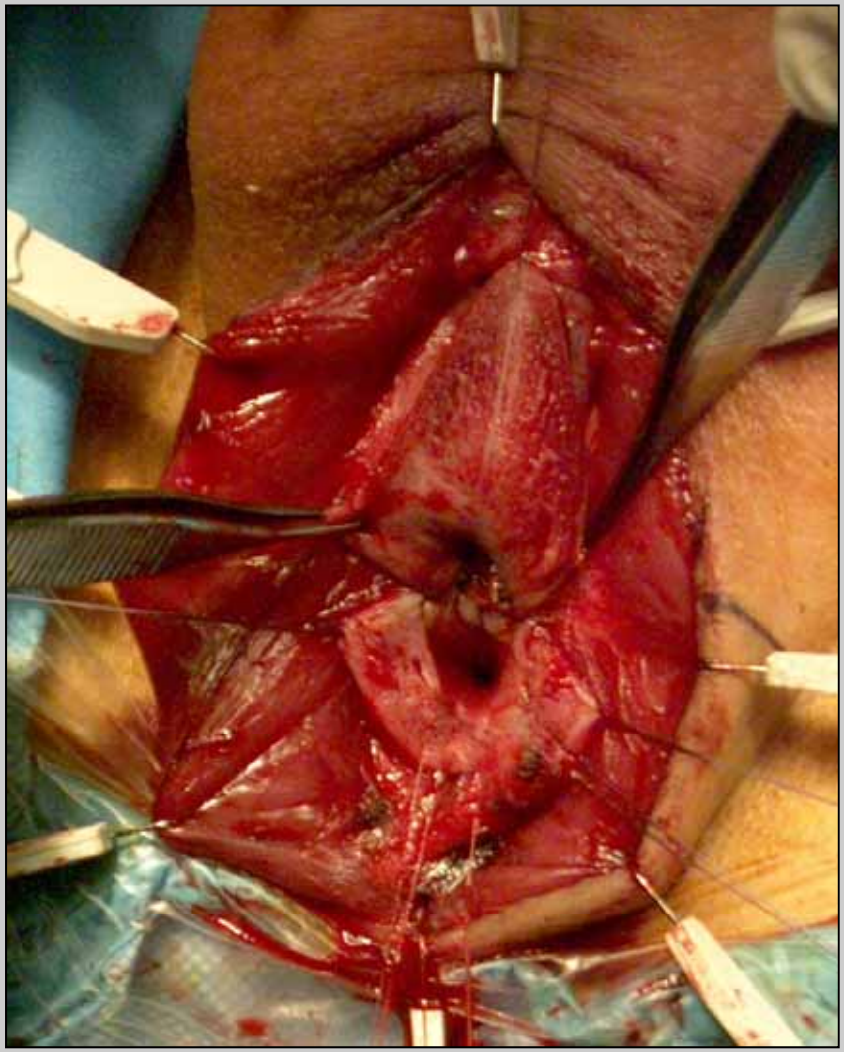

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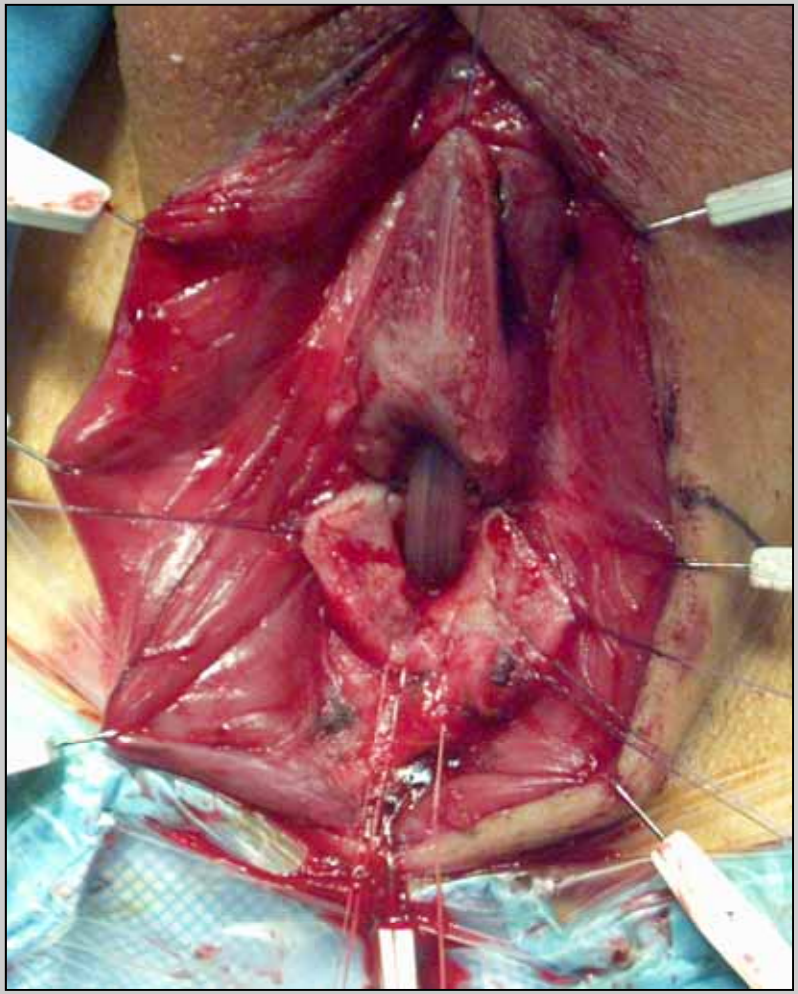

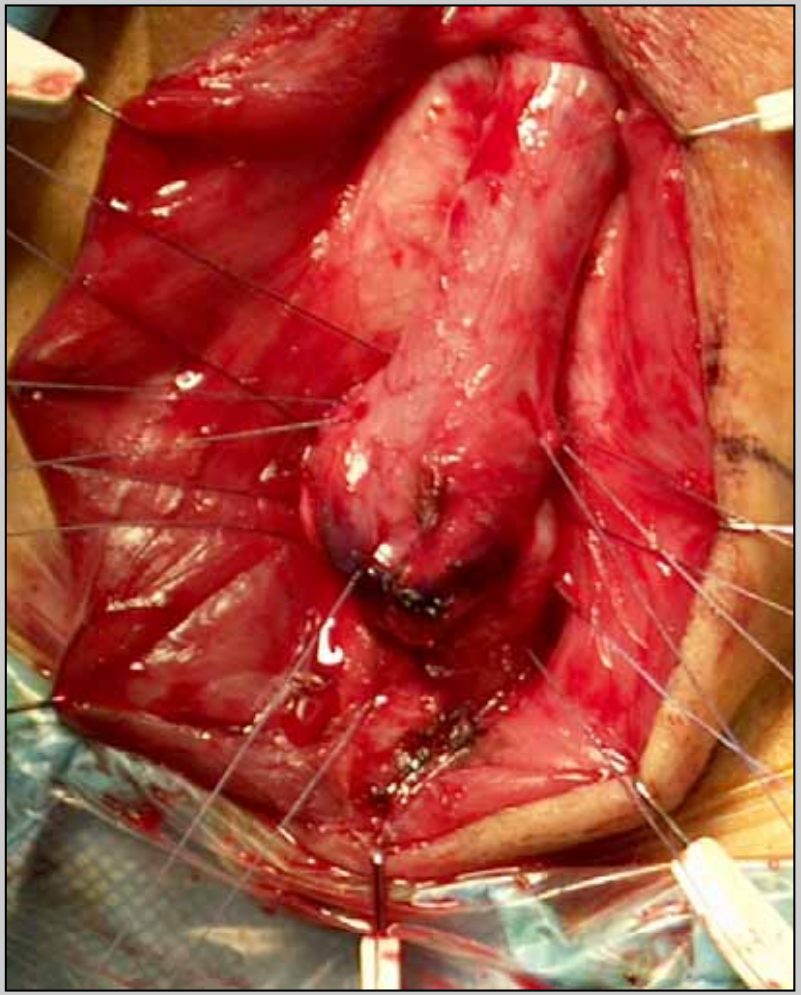

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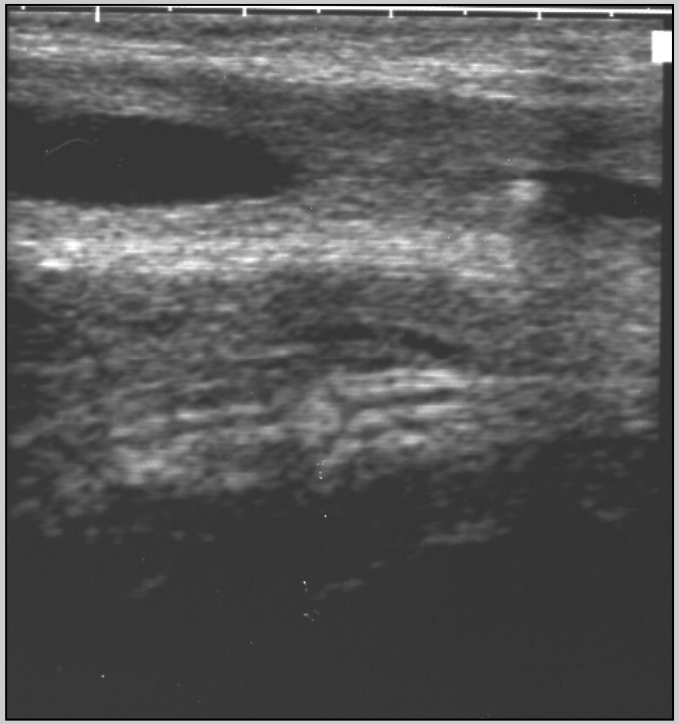
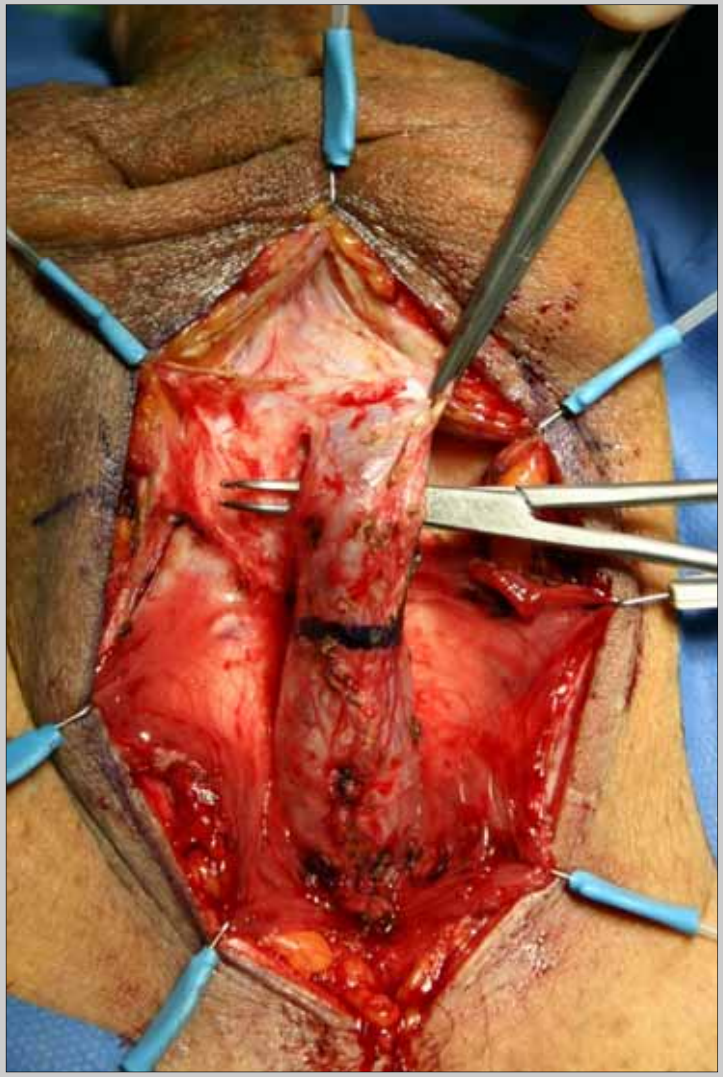
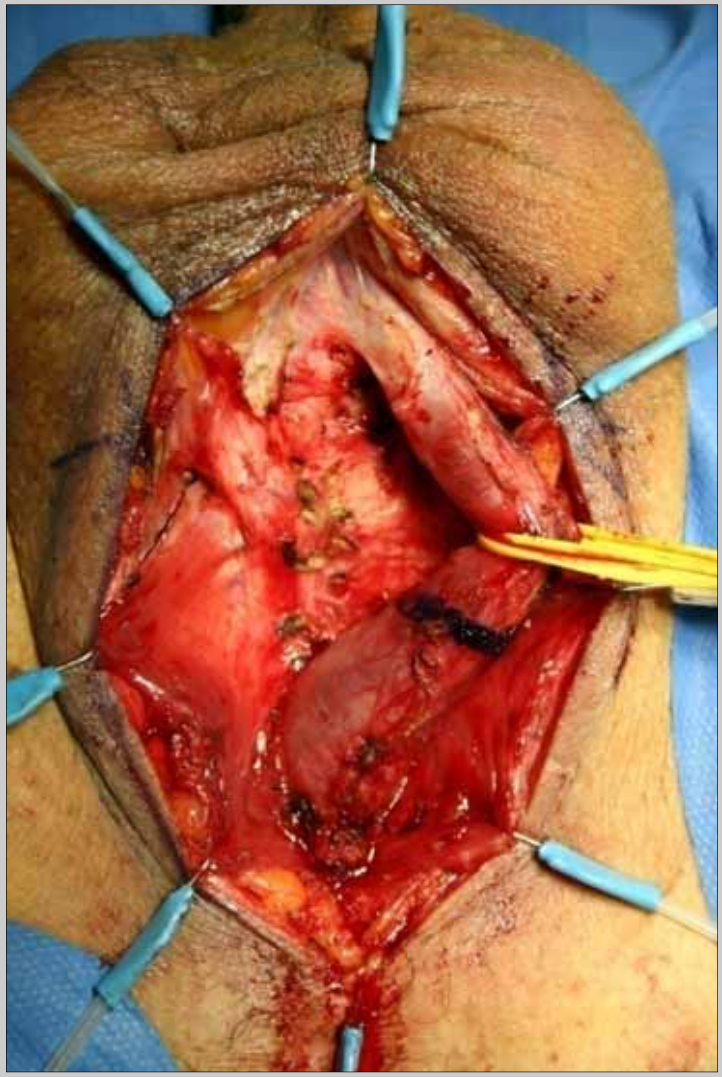
2 - 4 cm traumatic bulbar urethral stricture



Augmented anastomotic repair





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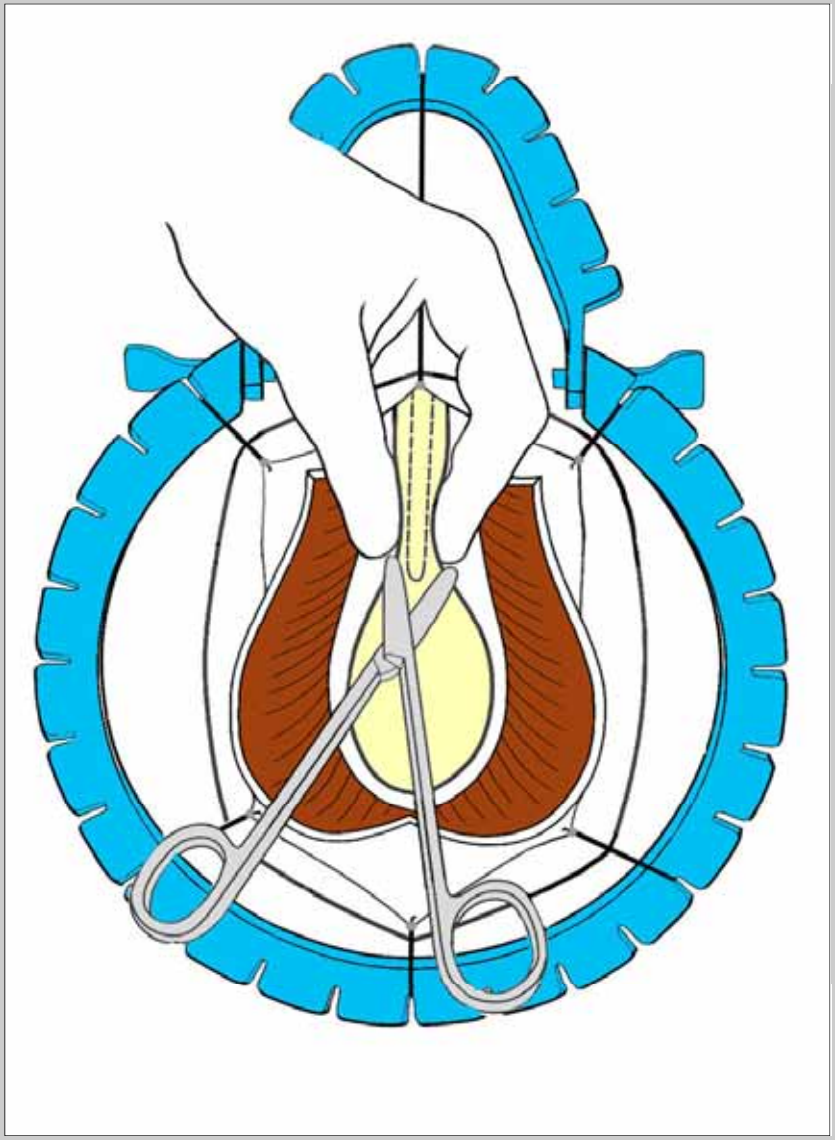

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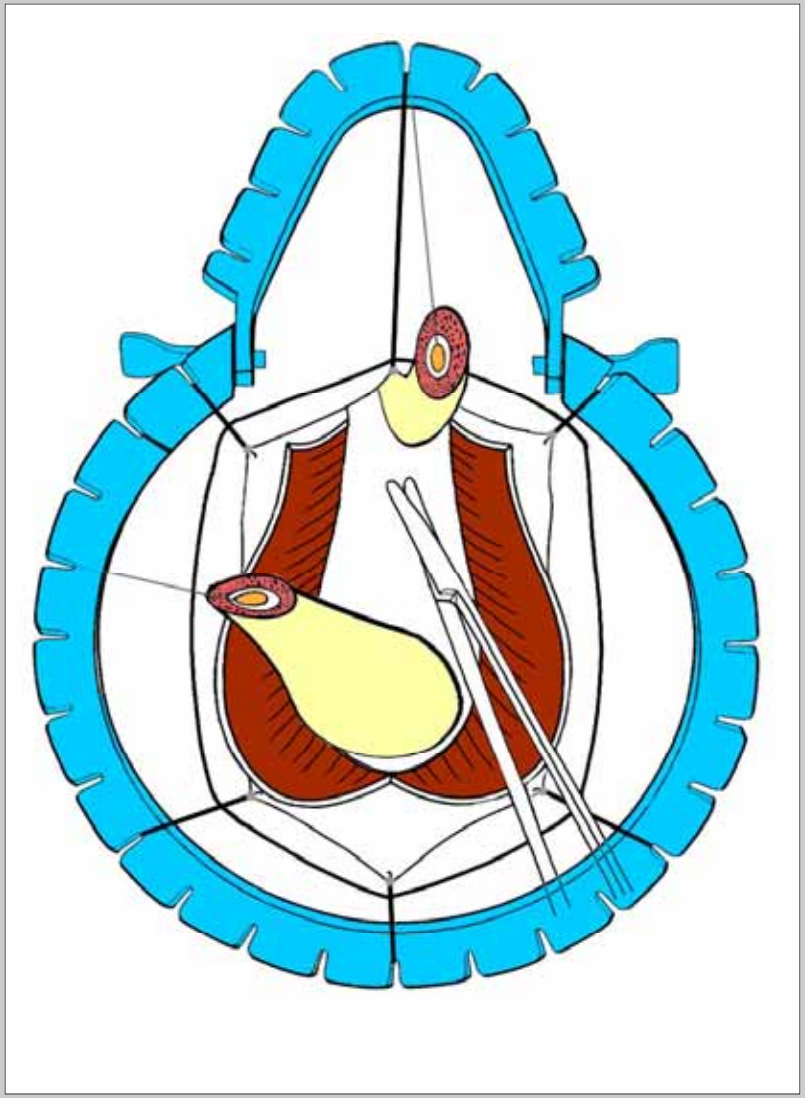

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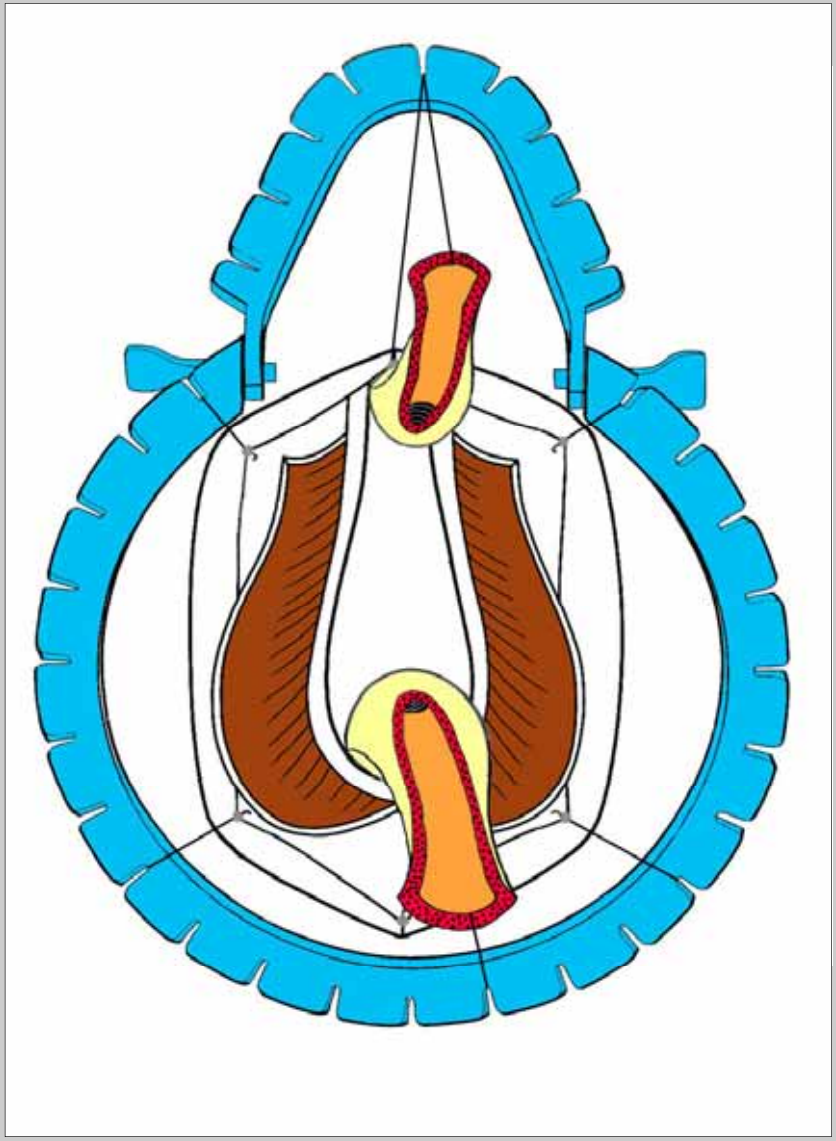

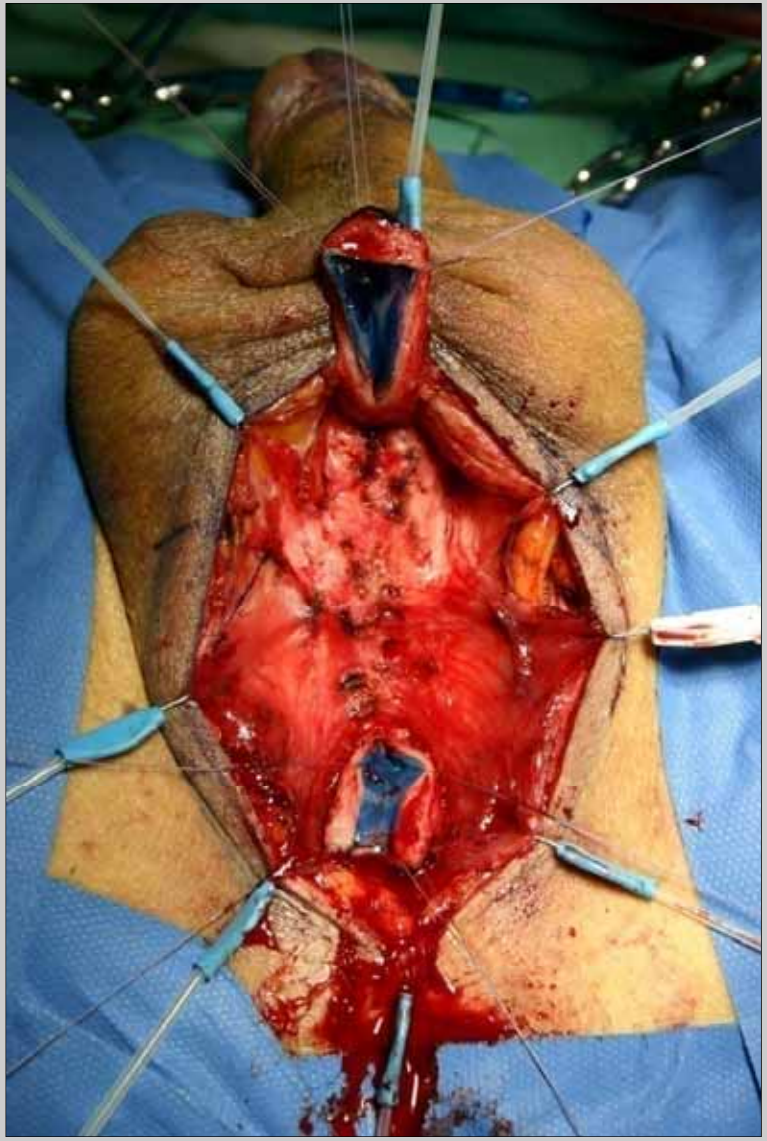

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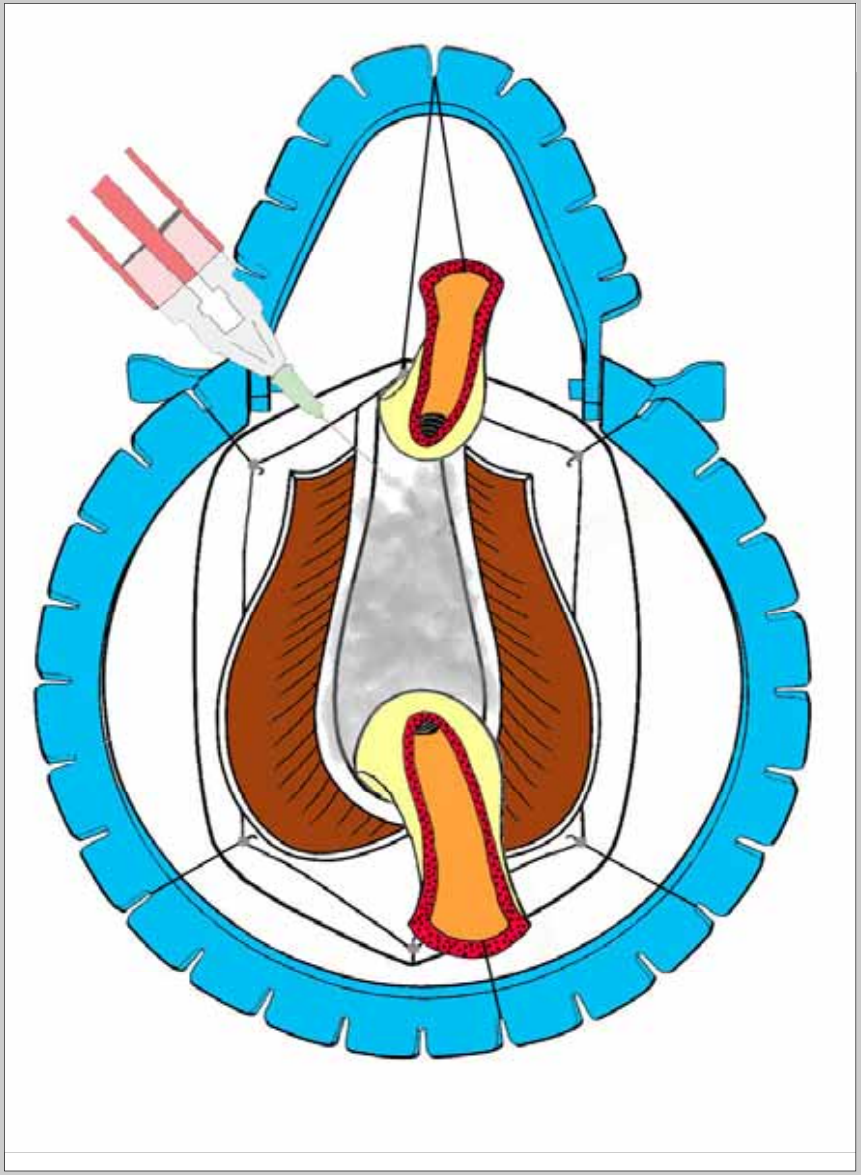

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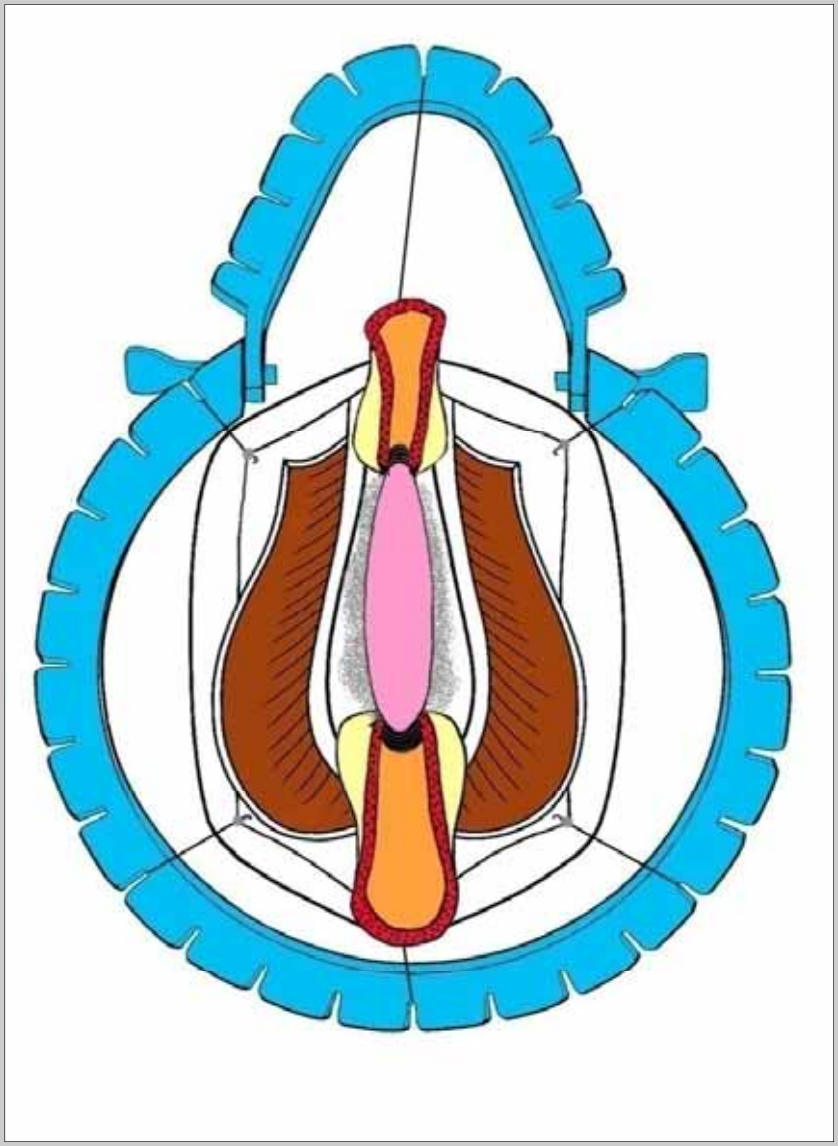

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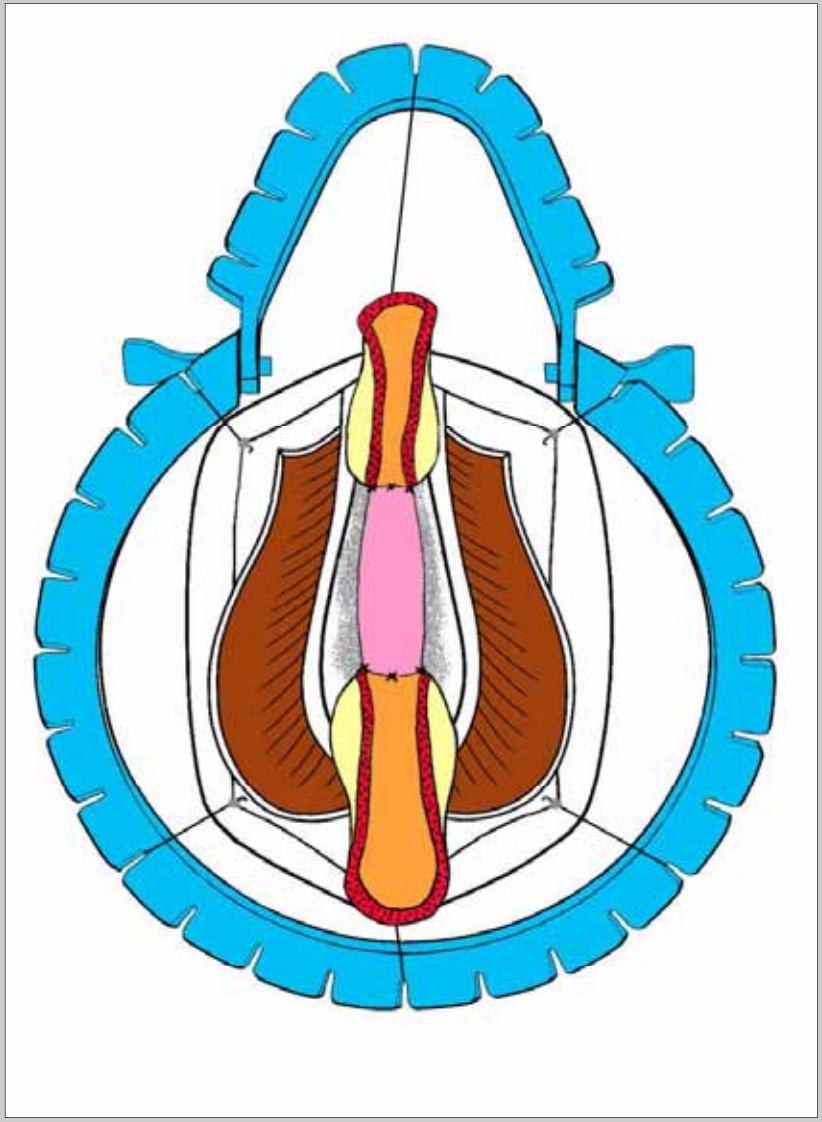

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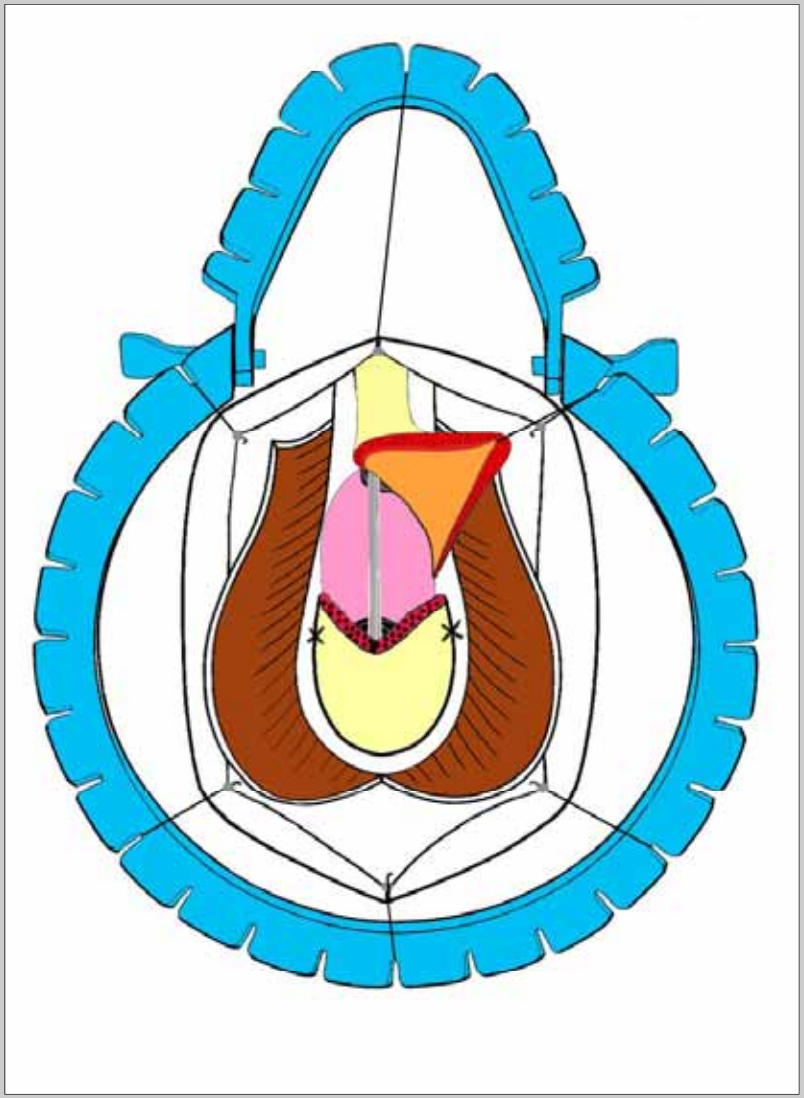

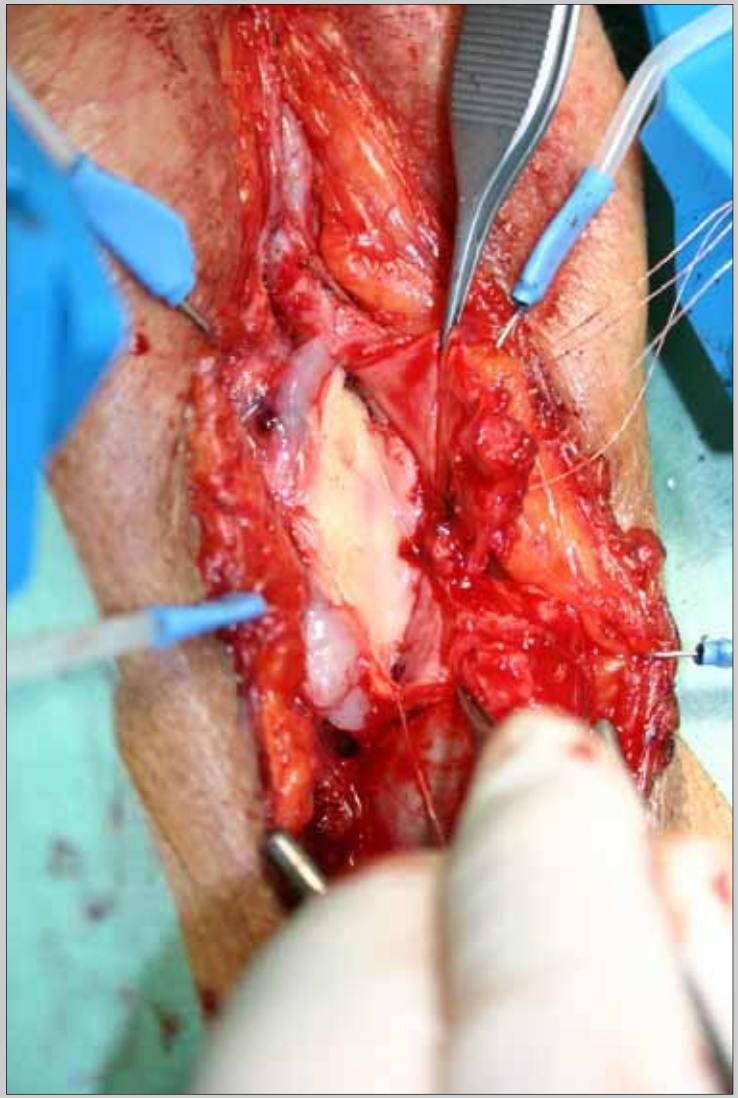

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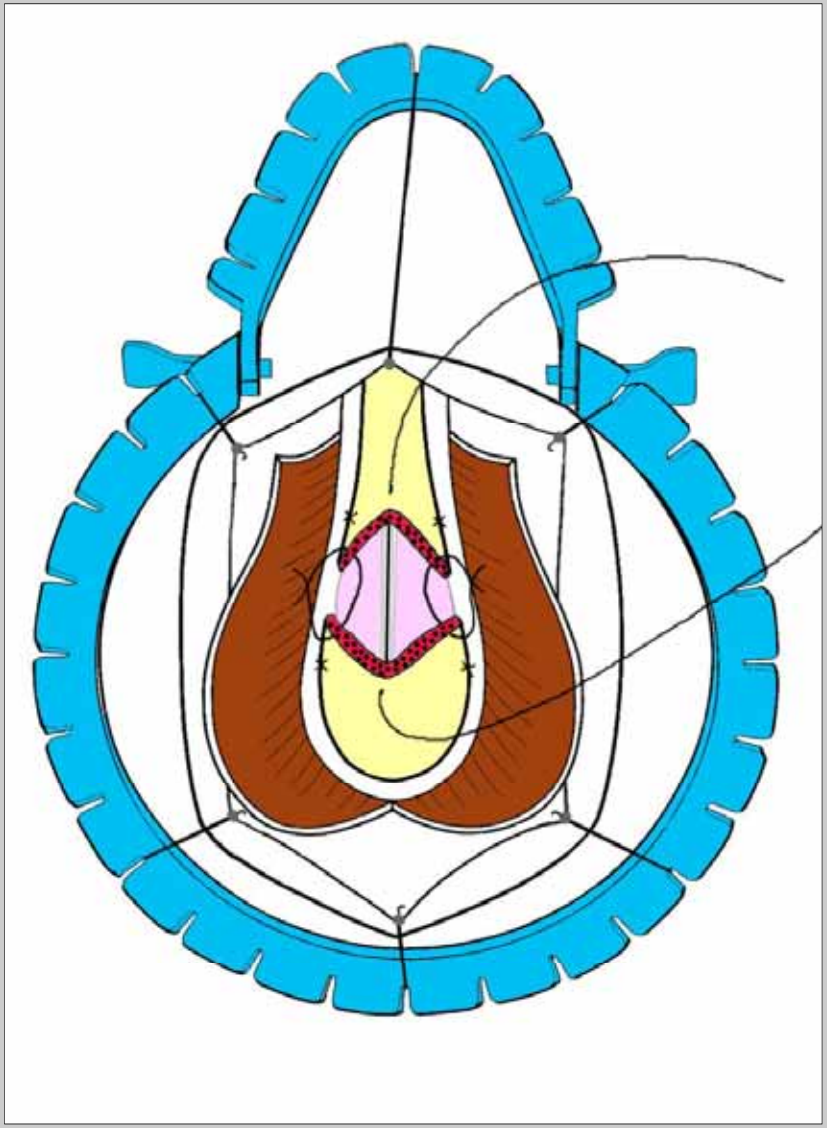

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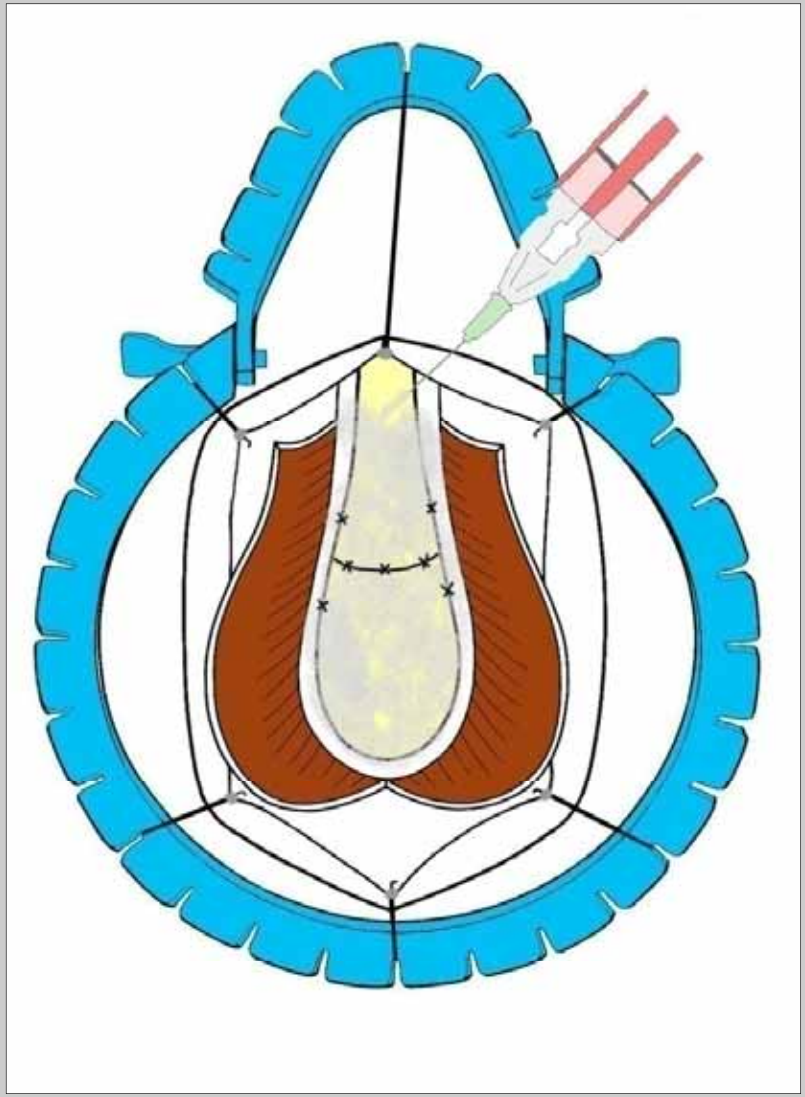

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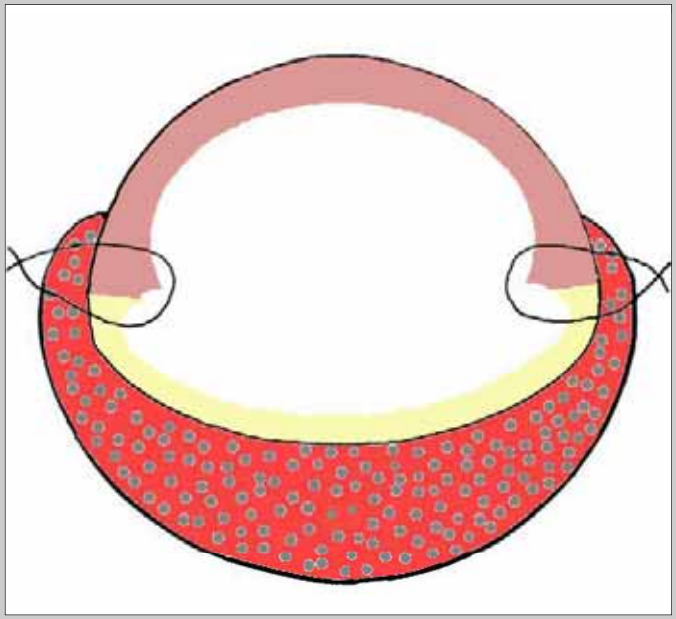
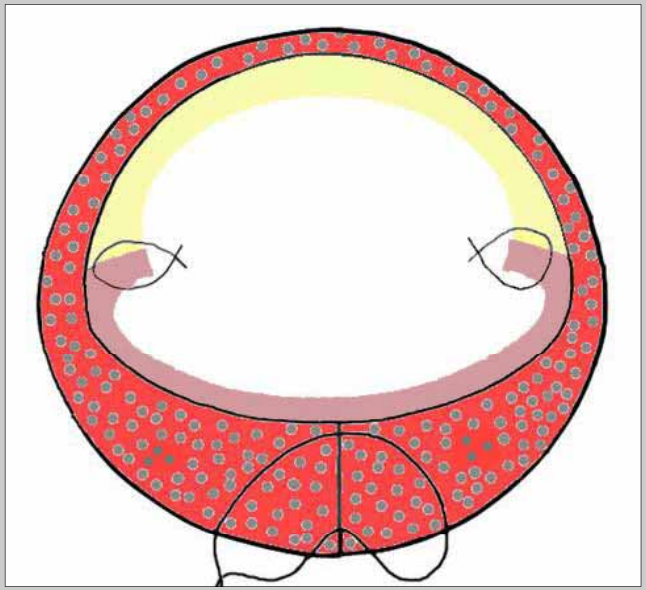
Oral mucosal graft onlay urethroplasty



dorsal



ventral

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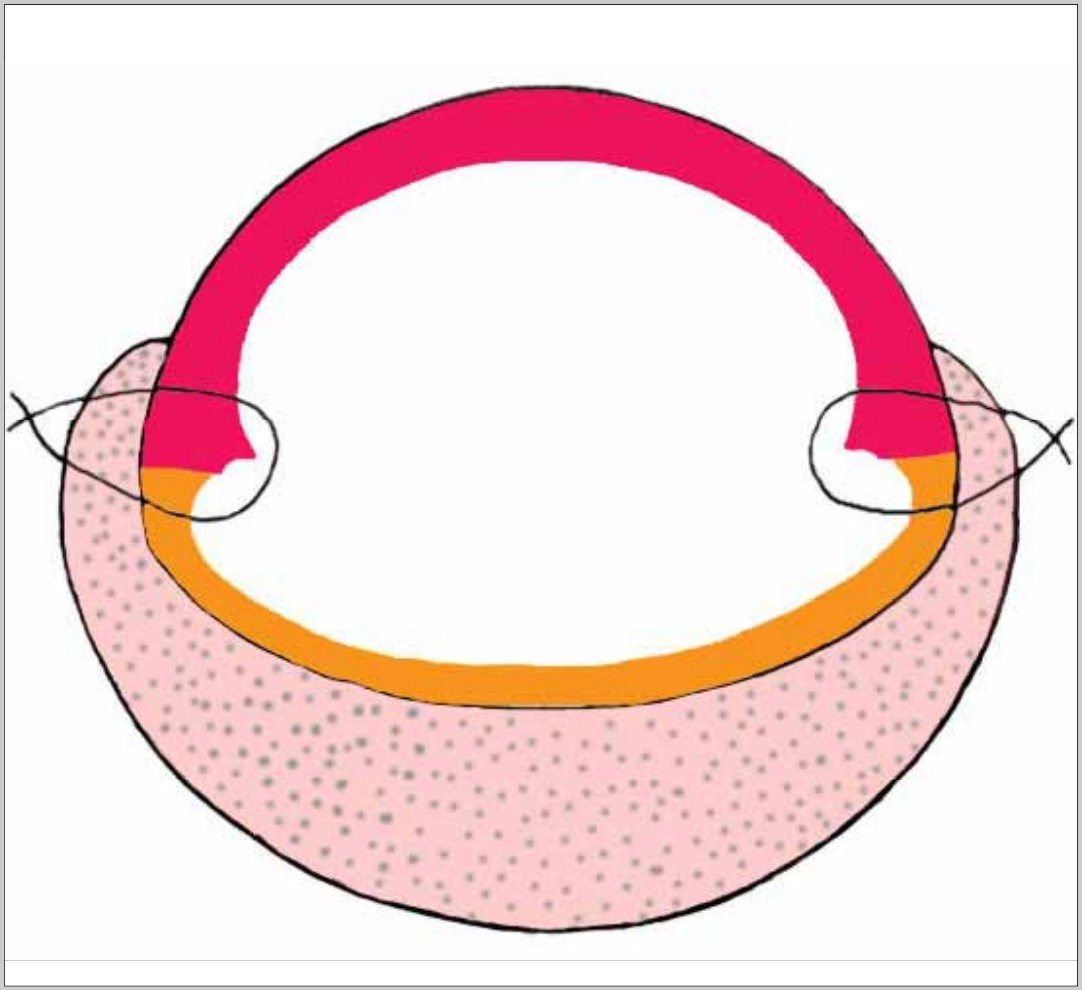
Muscle and nerve sparing dorsal onlay graft urethroplasty



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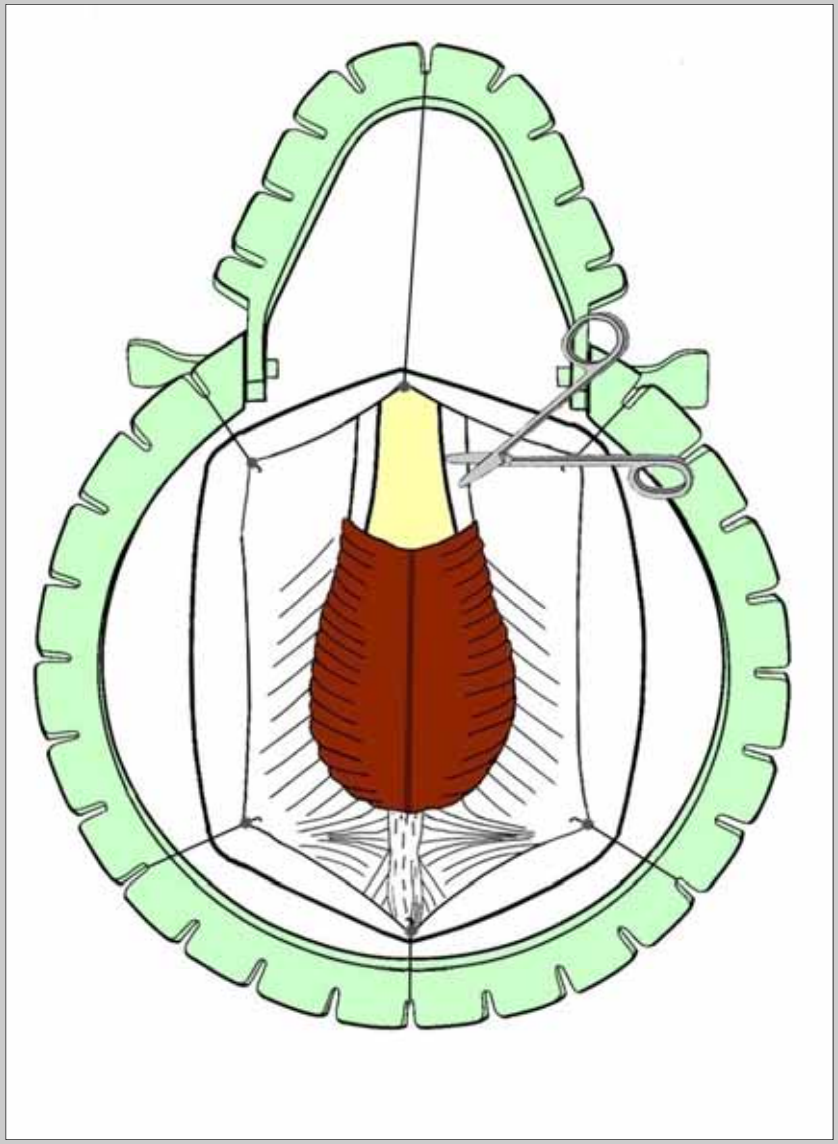

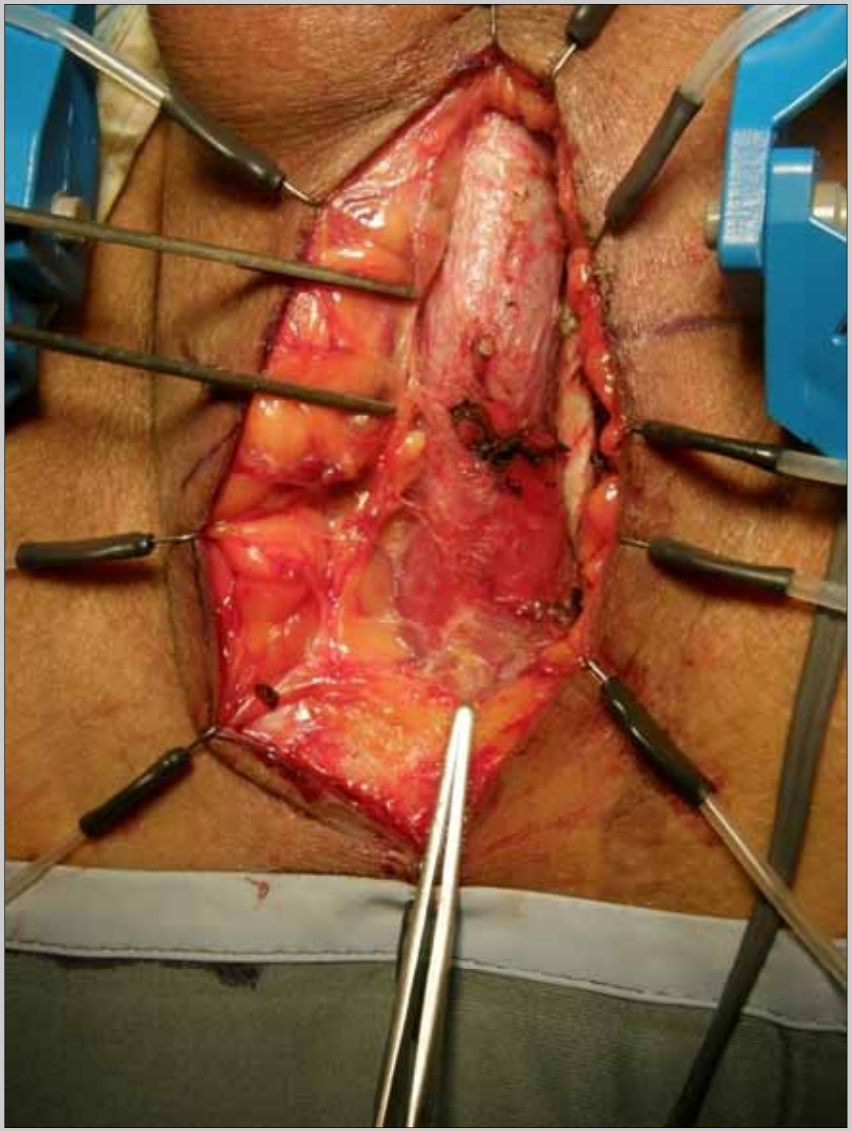

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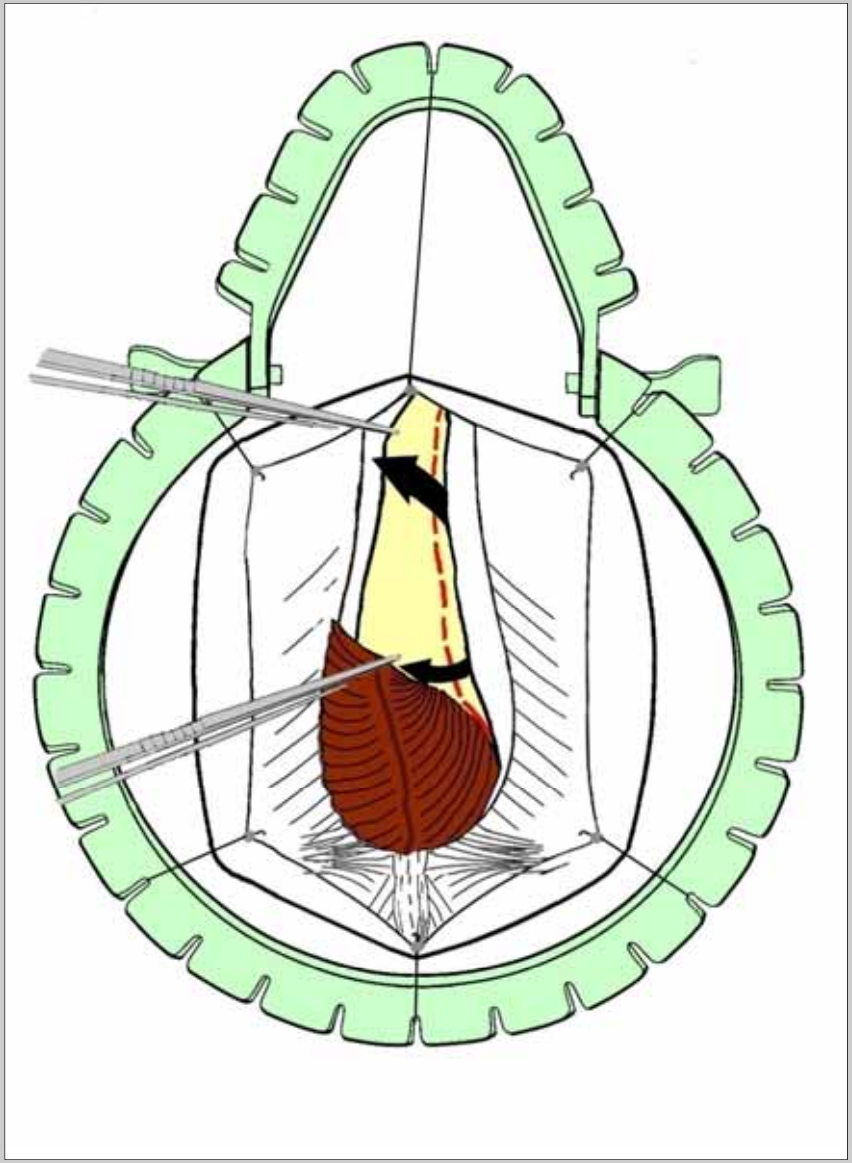

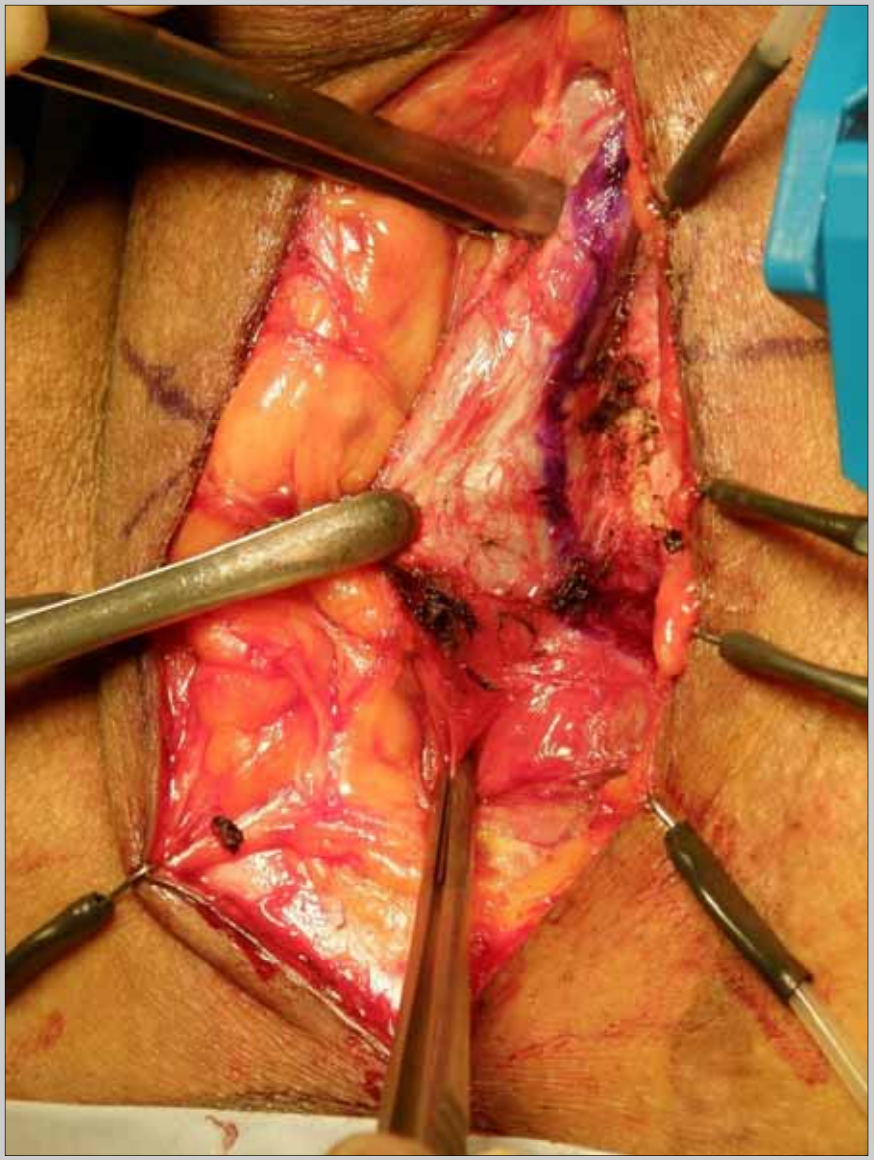

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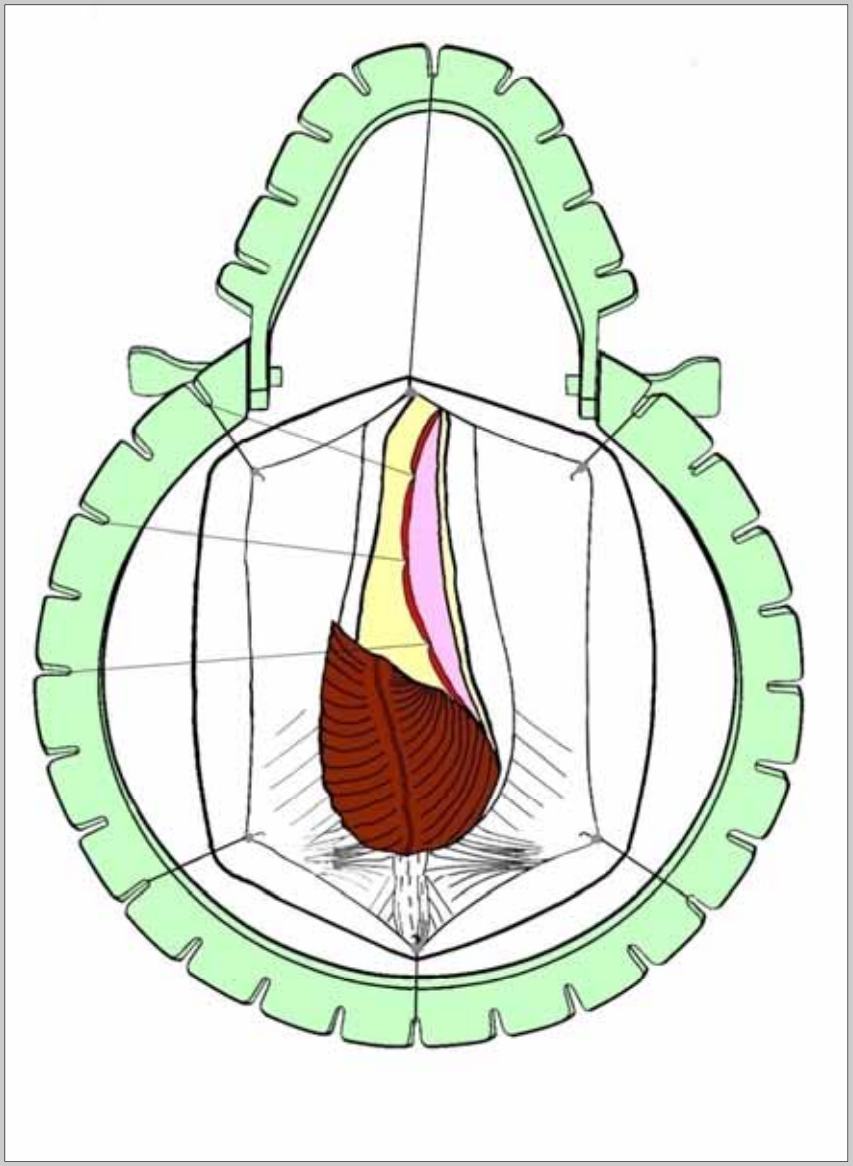

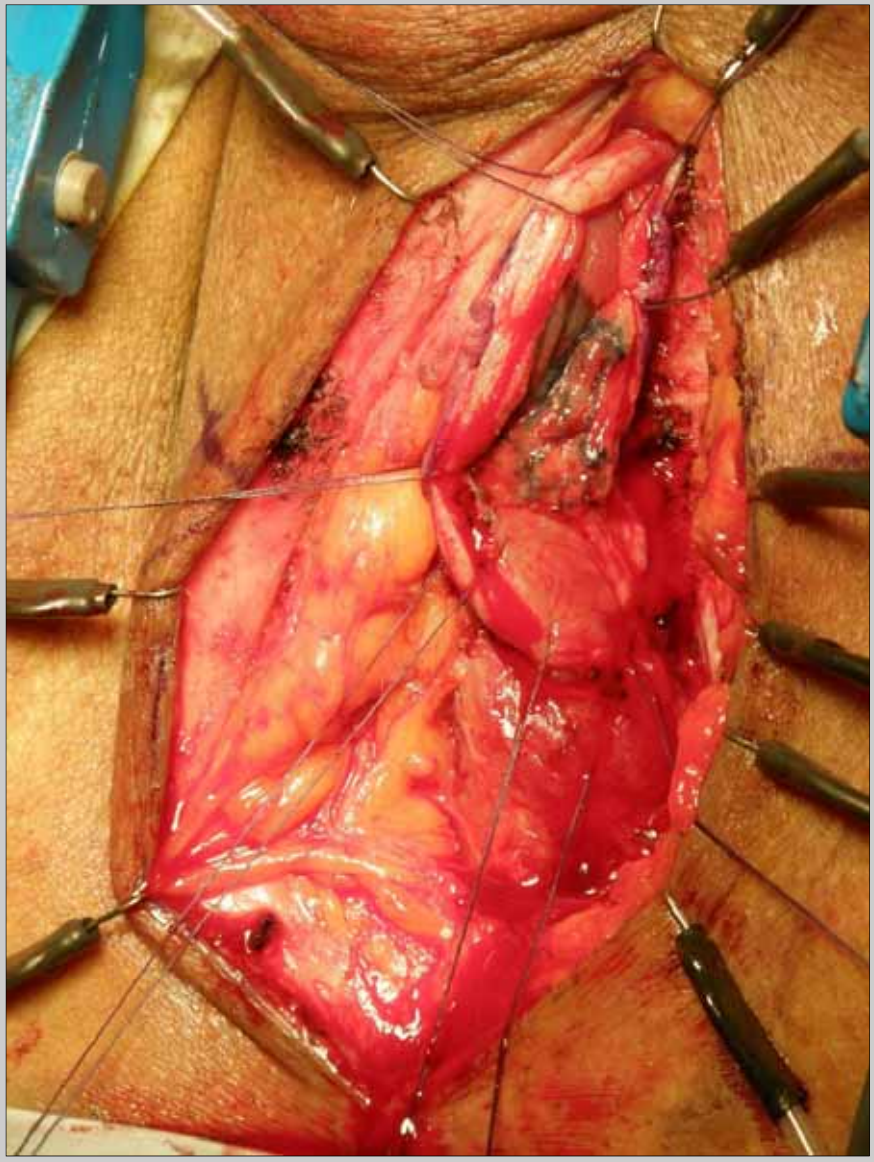

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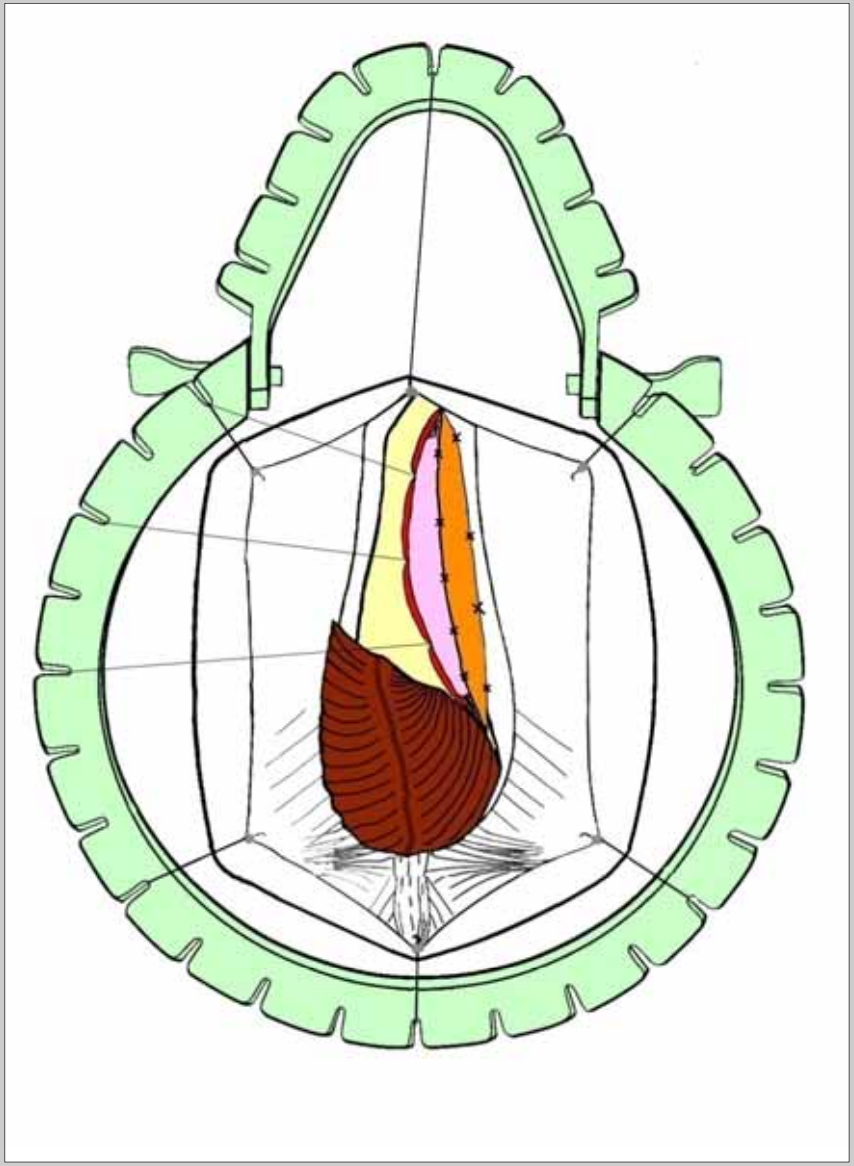

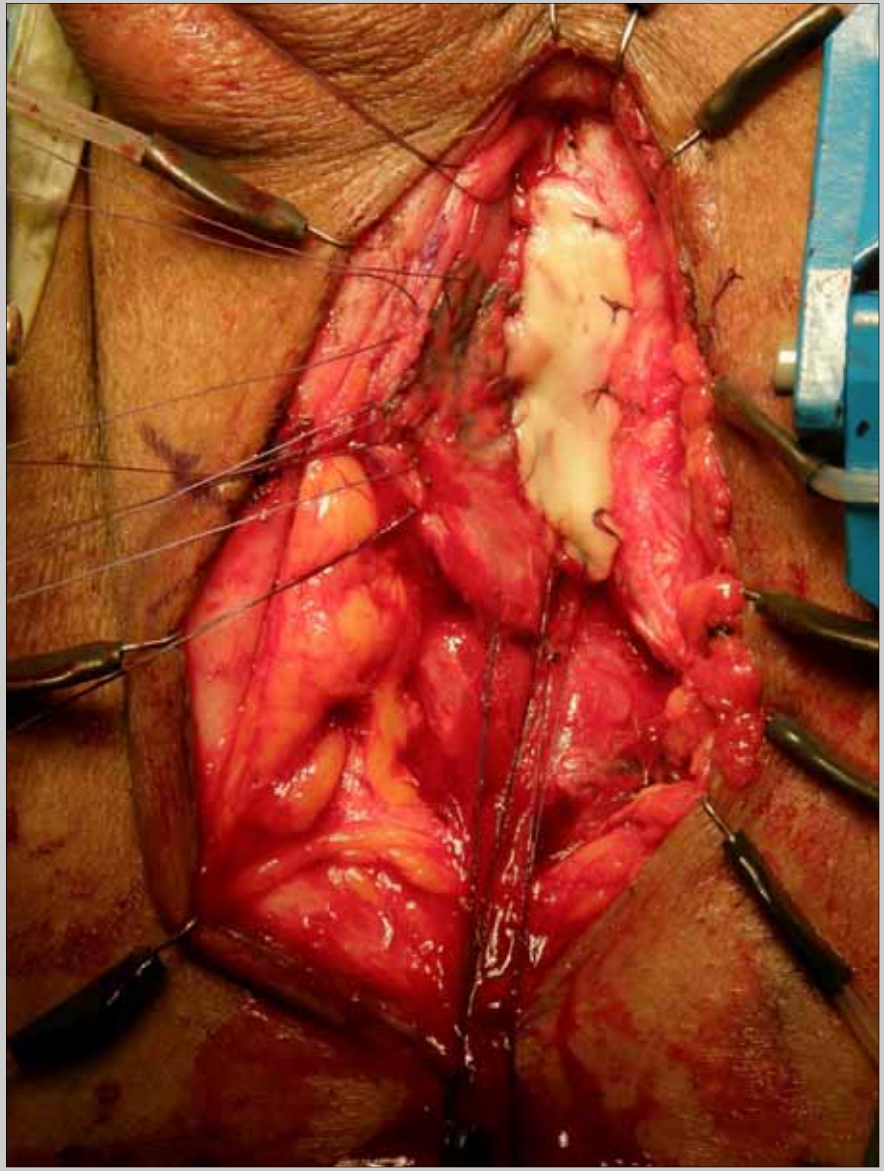

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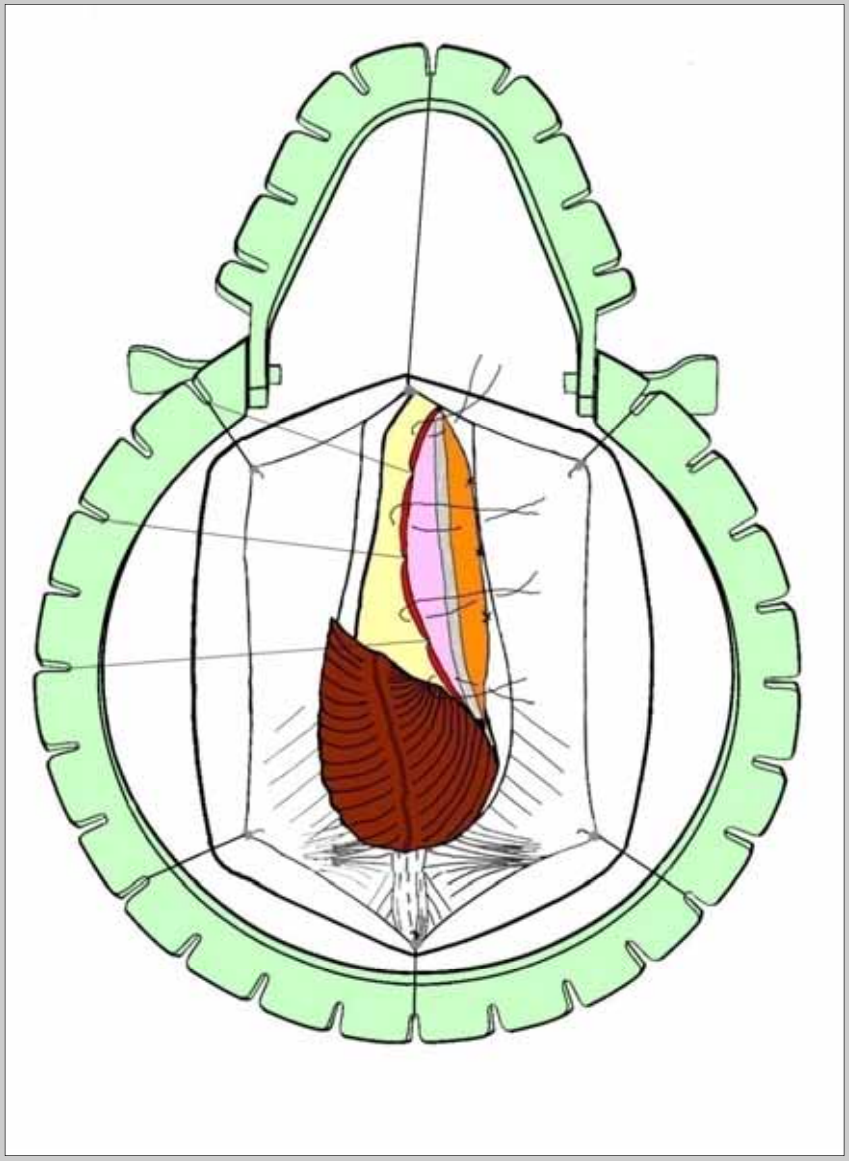

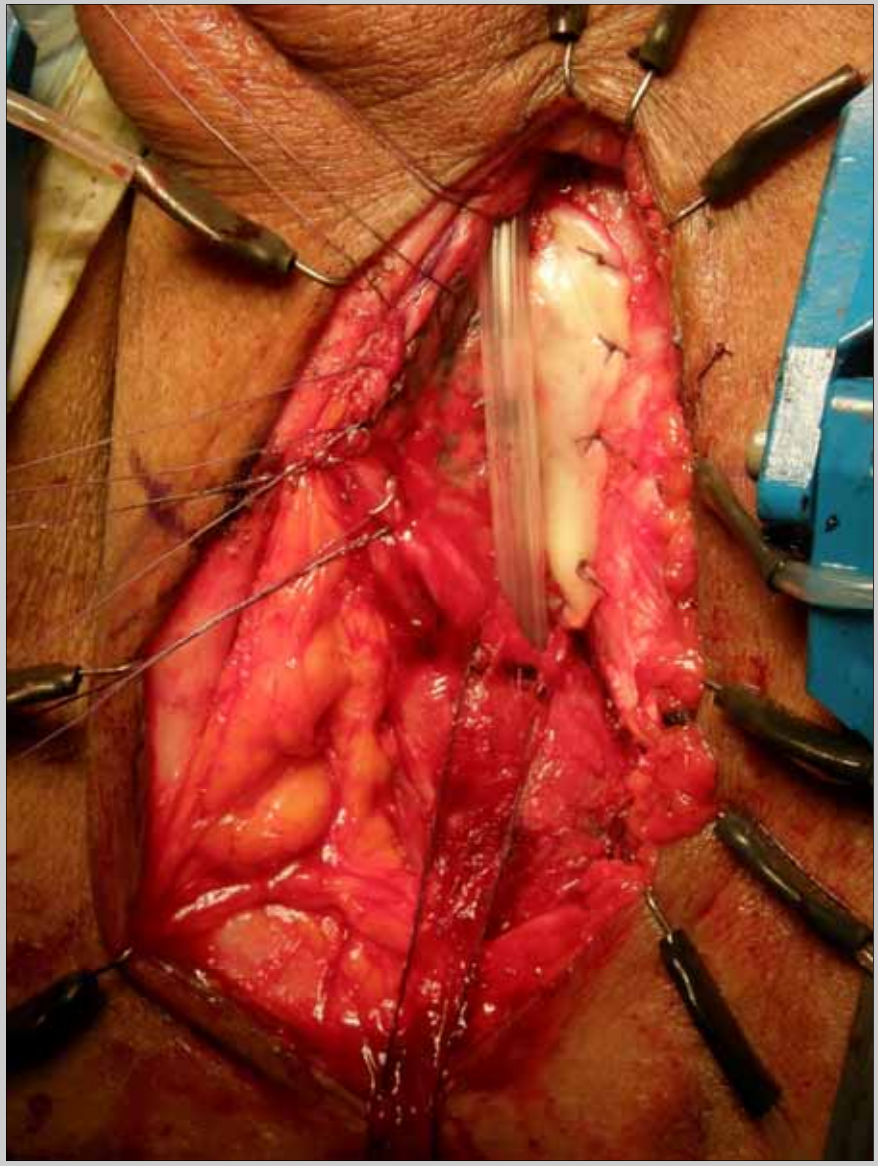

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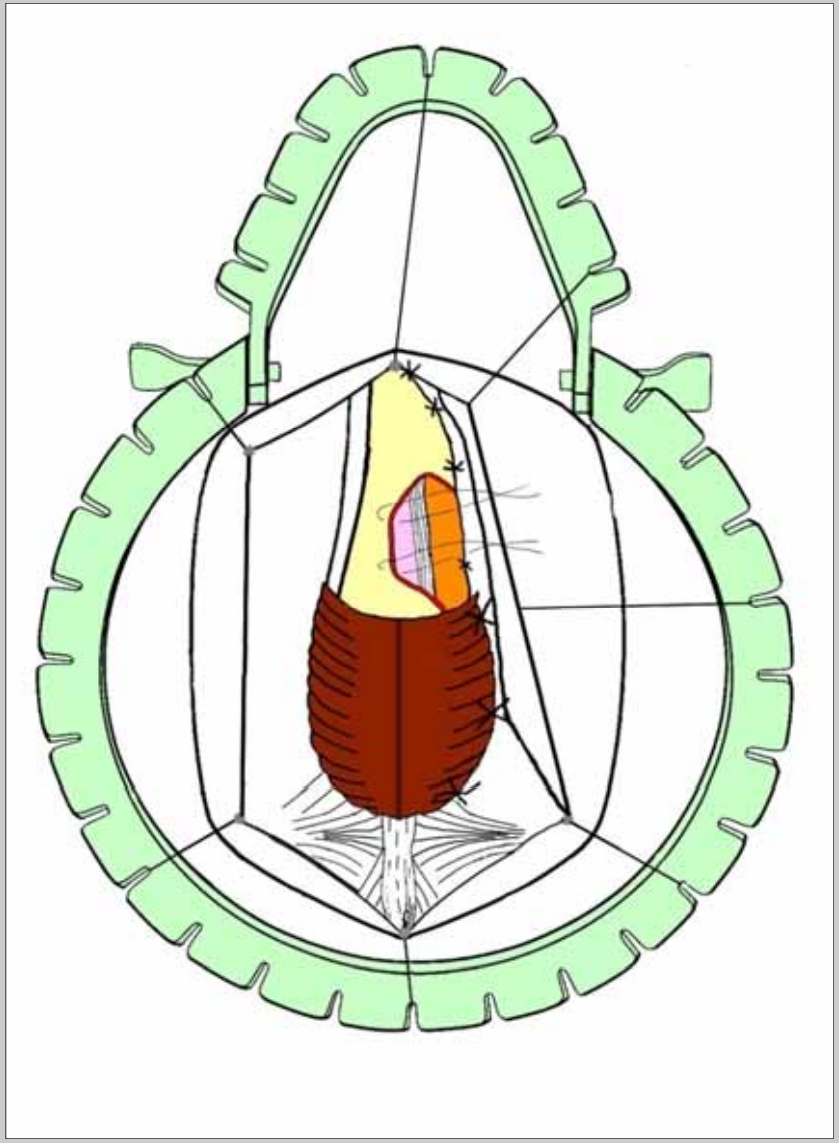

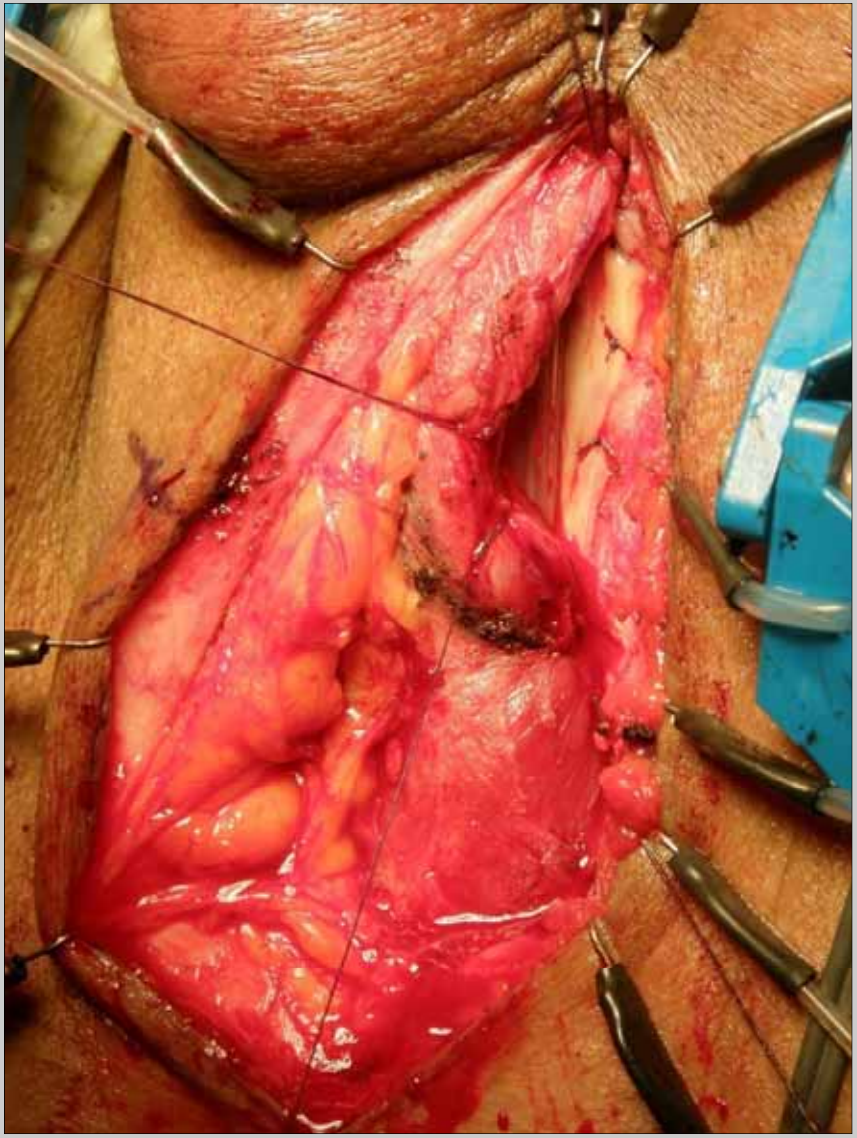

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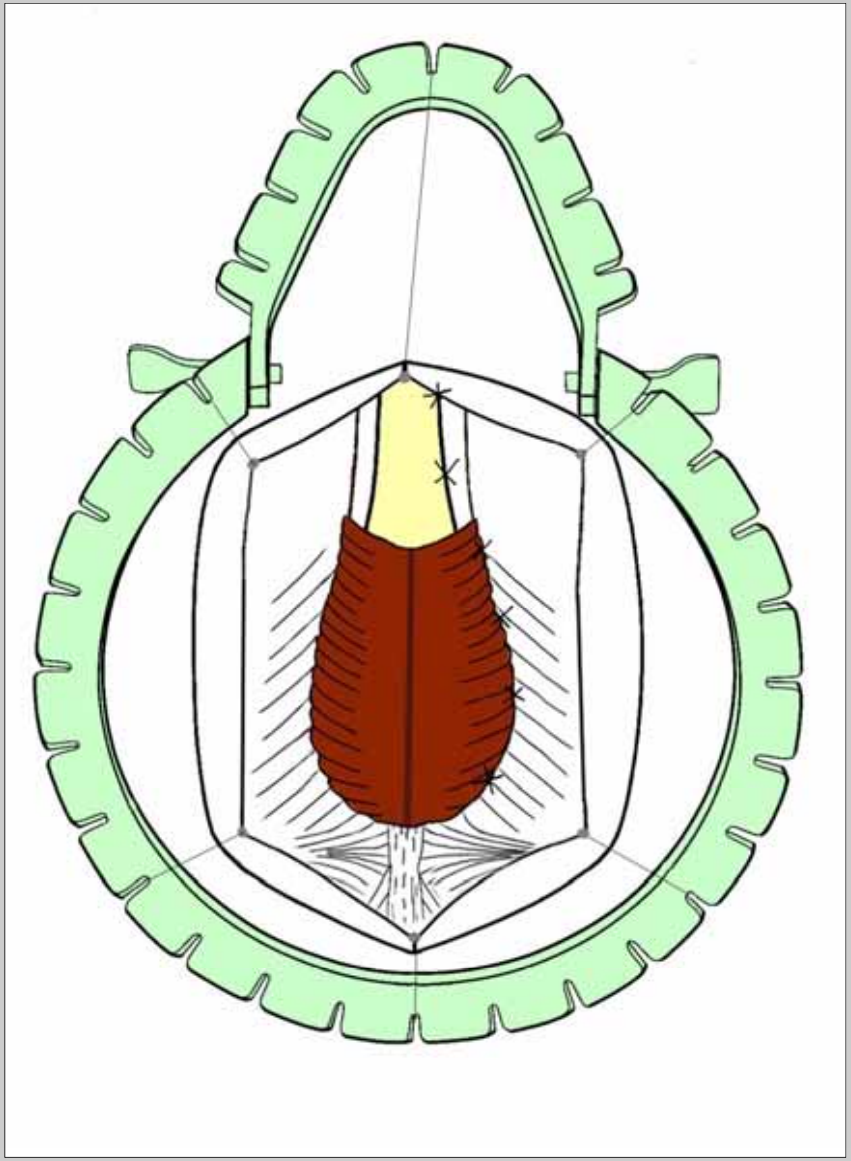

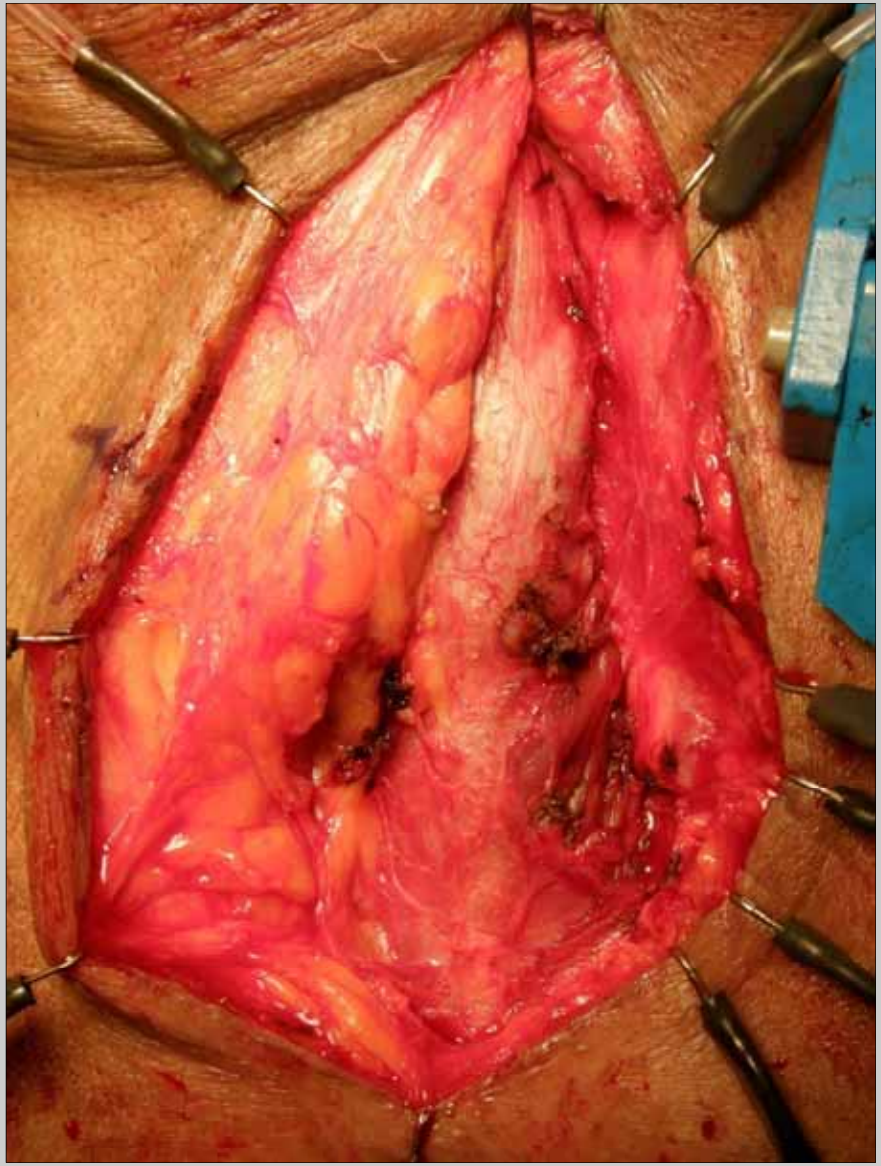

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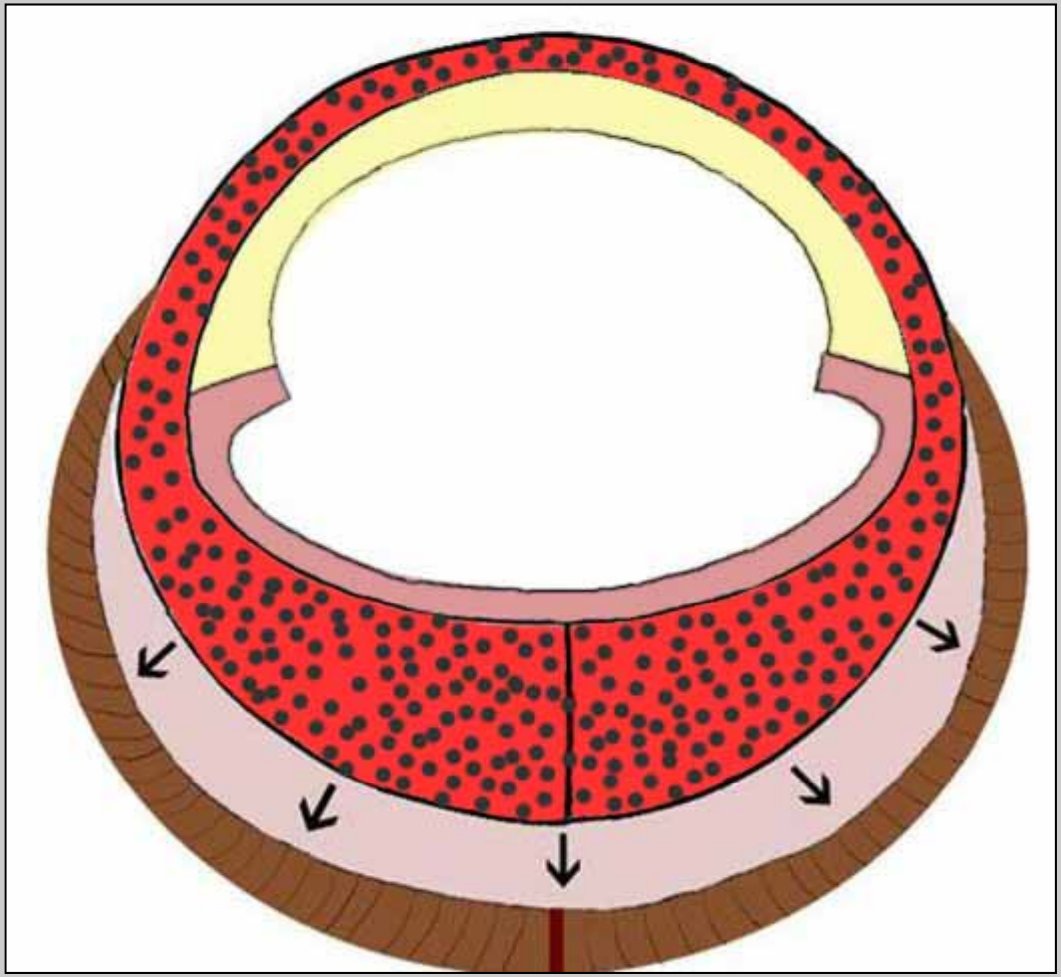
Muscle and nerve sparing ventral onlay graft bulbar urethroplasty



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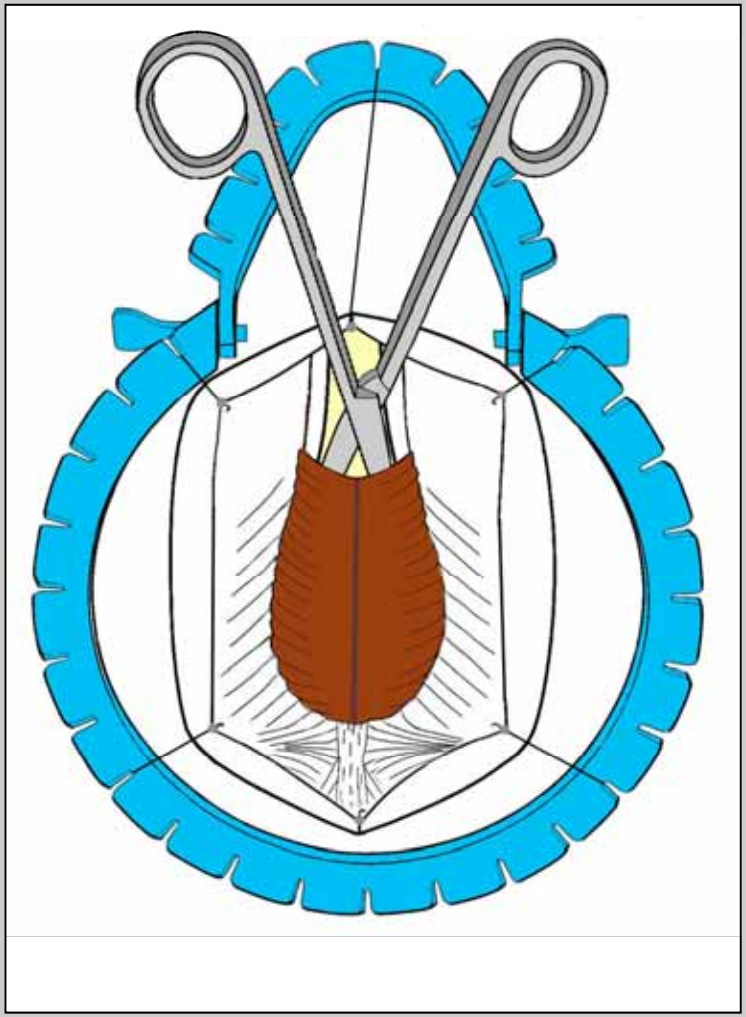
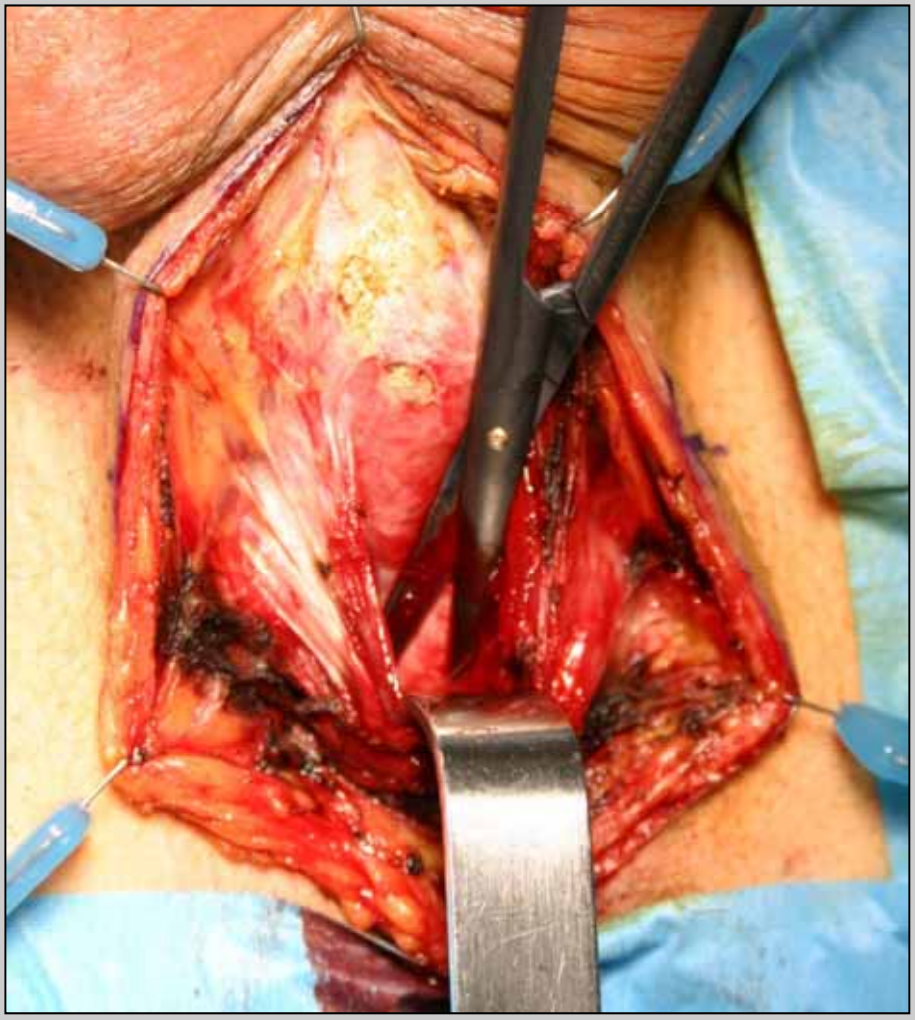
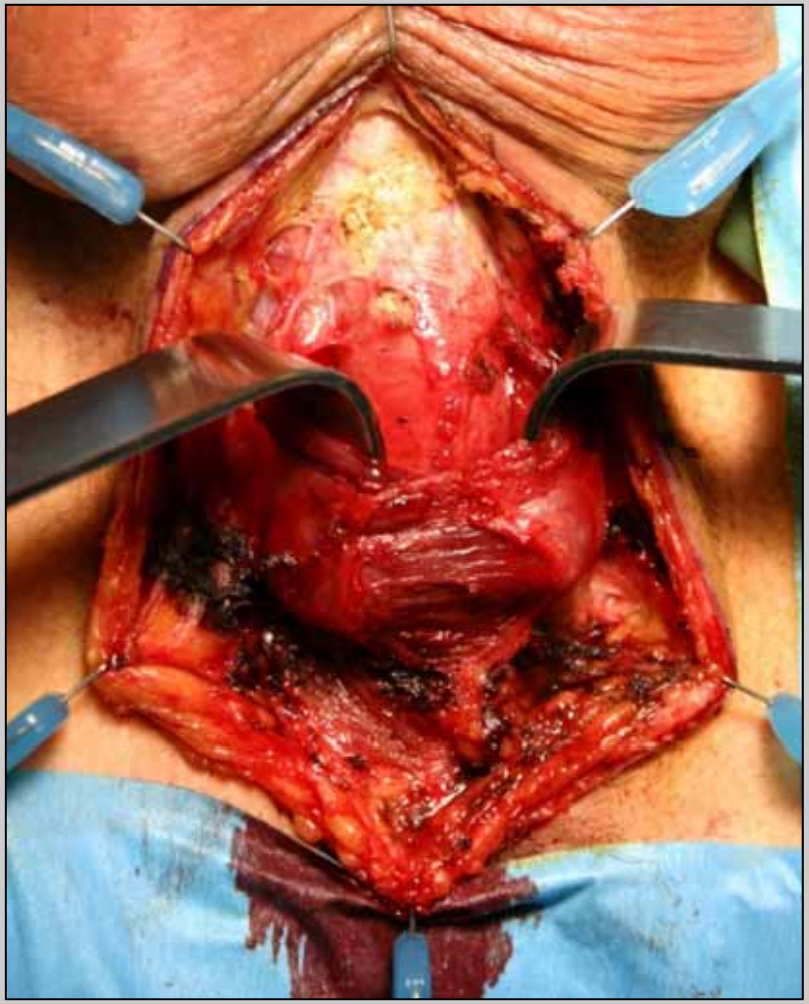
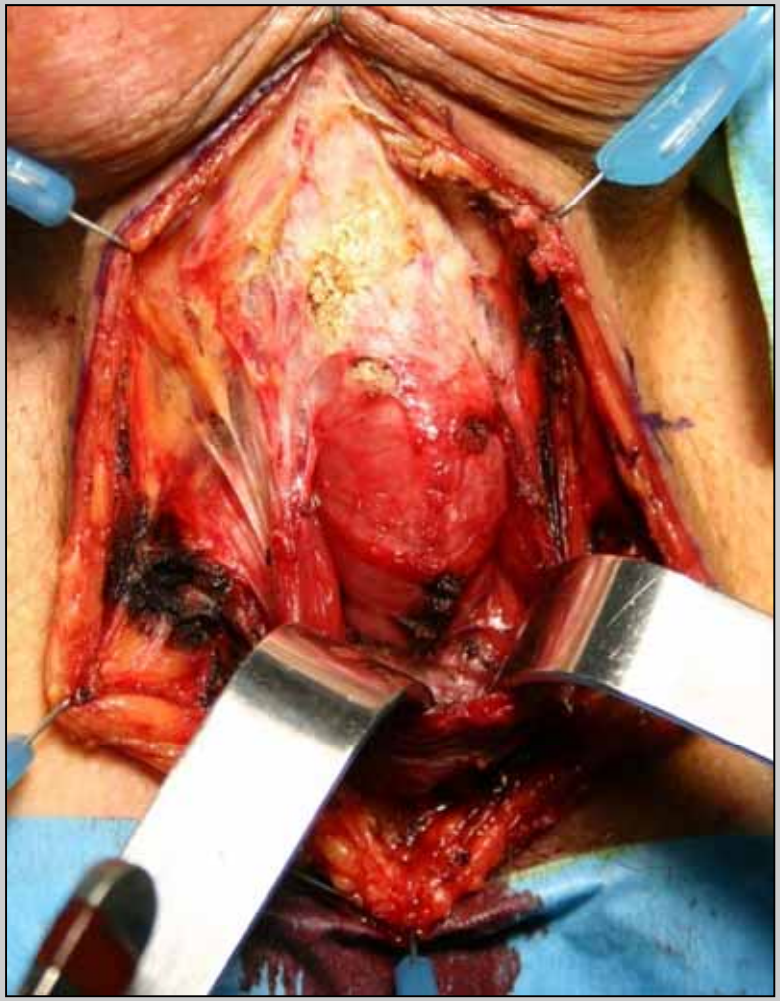




Barbagli G et al., Eur Urol 2008; 54:335-343





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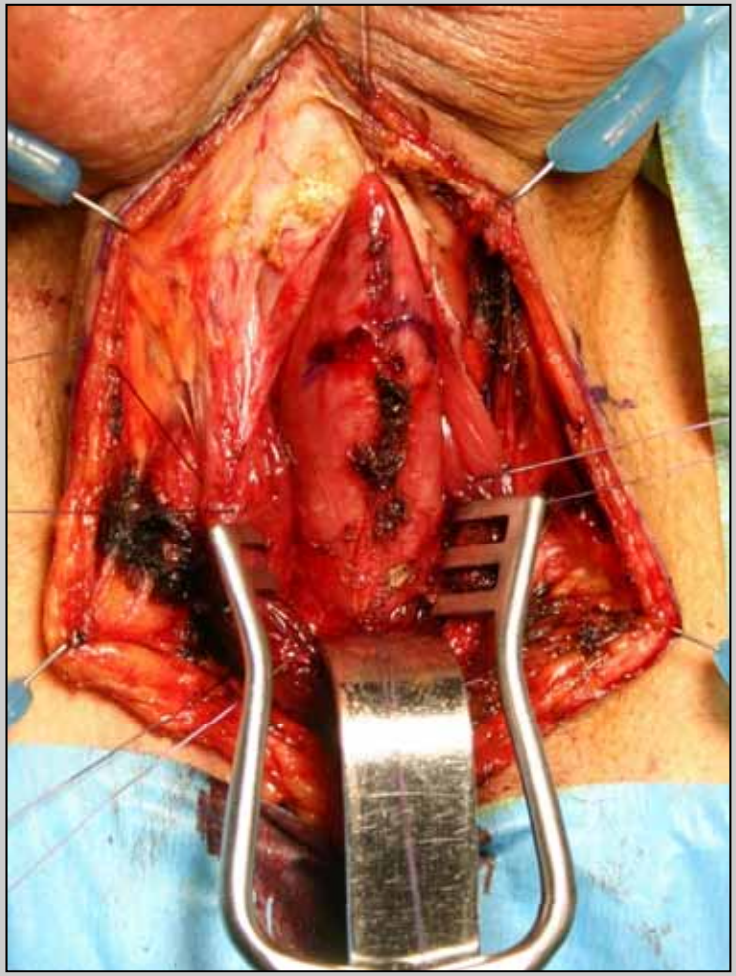

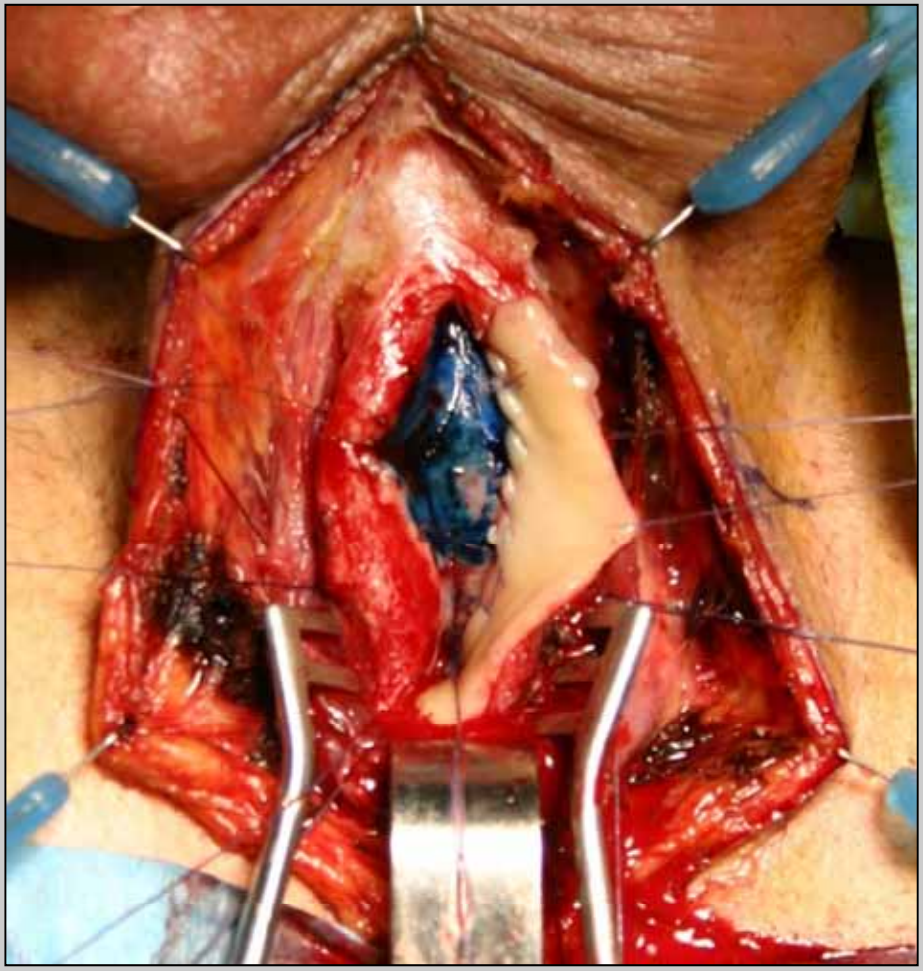

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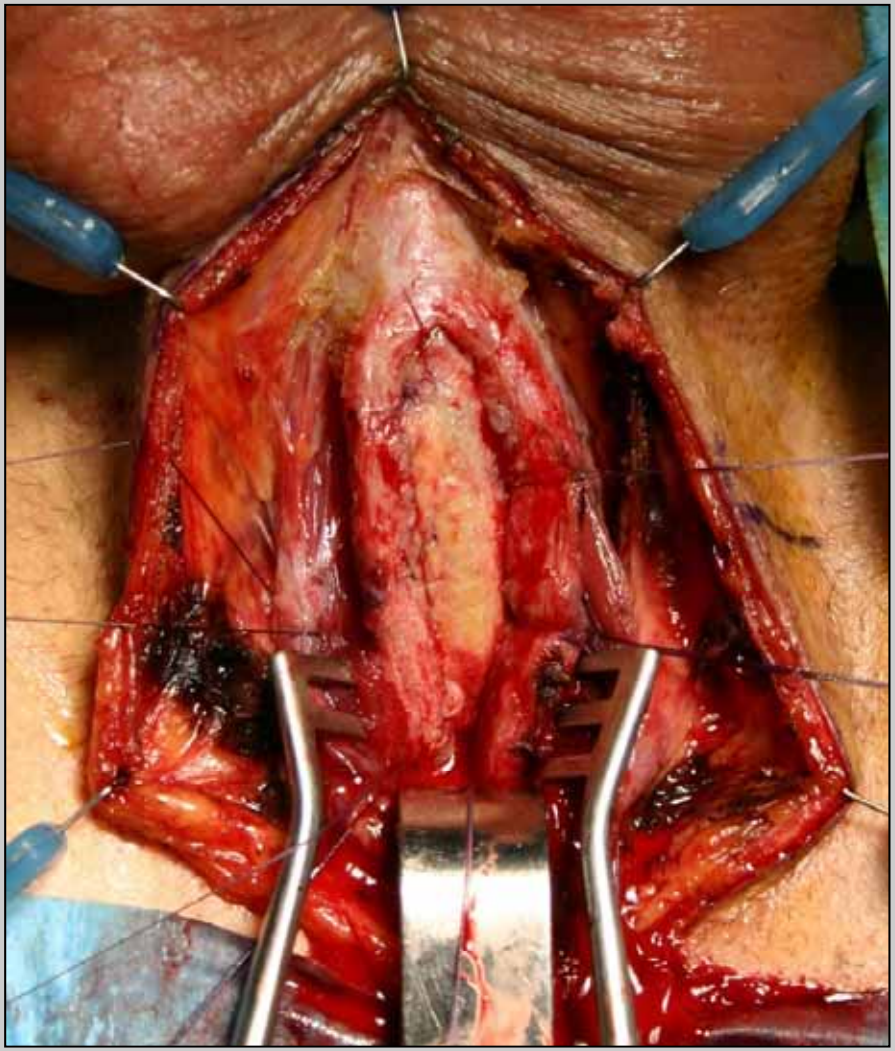

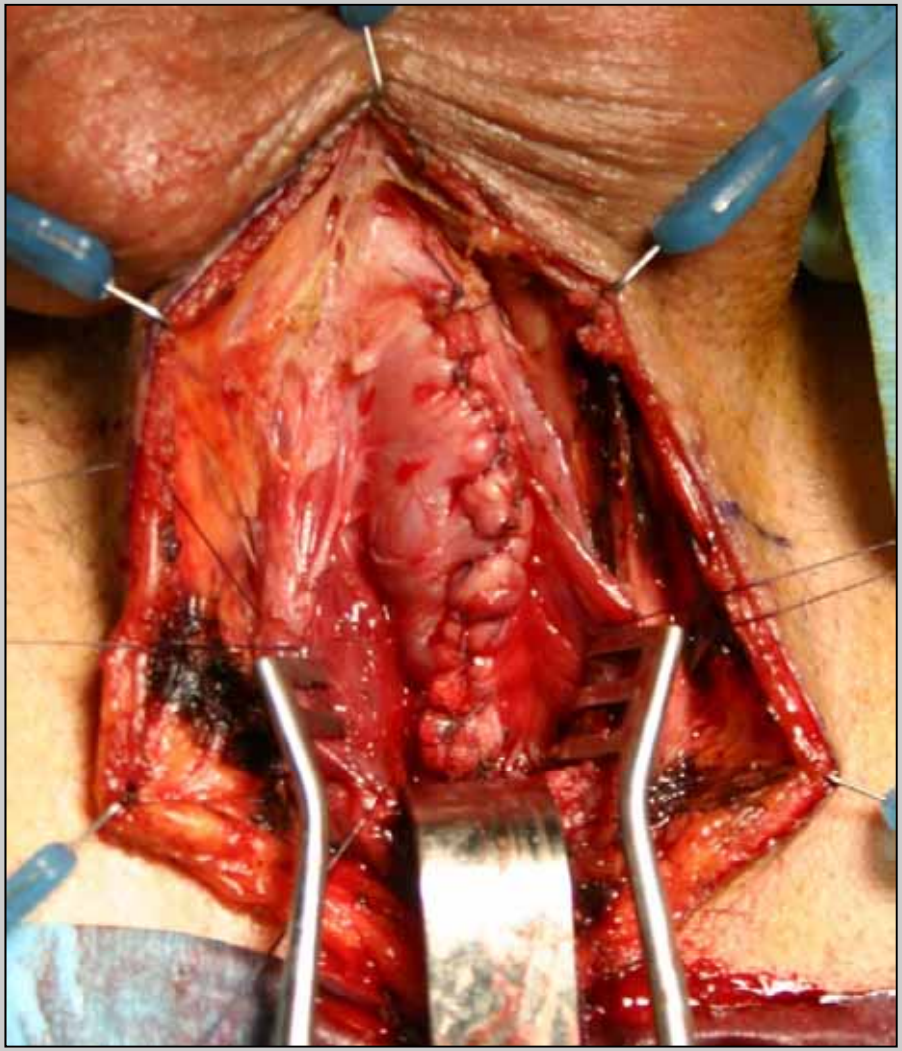

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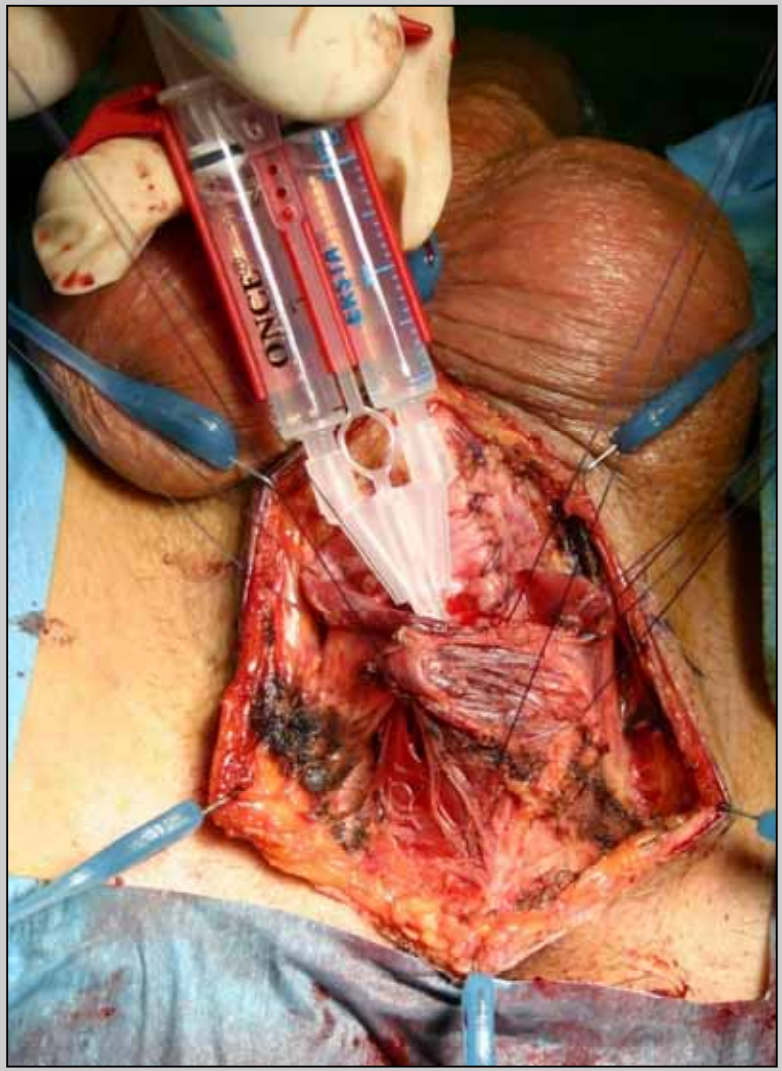

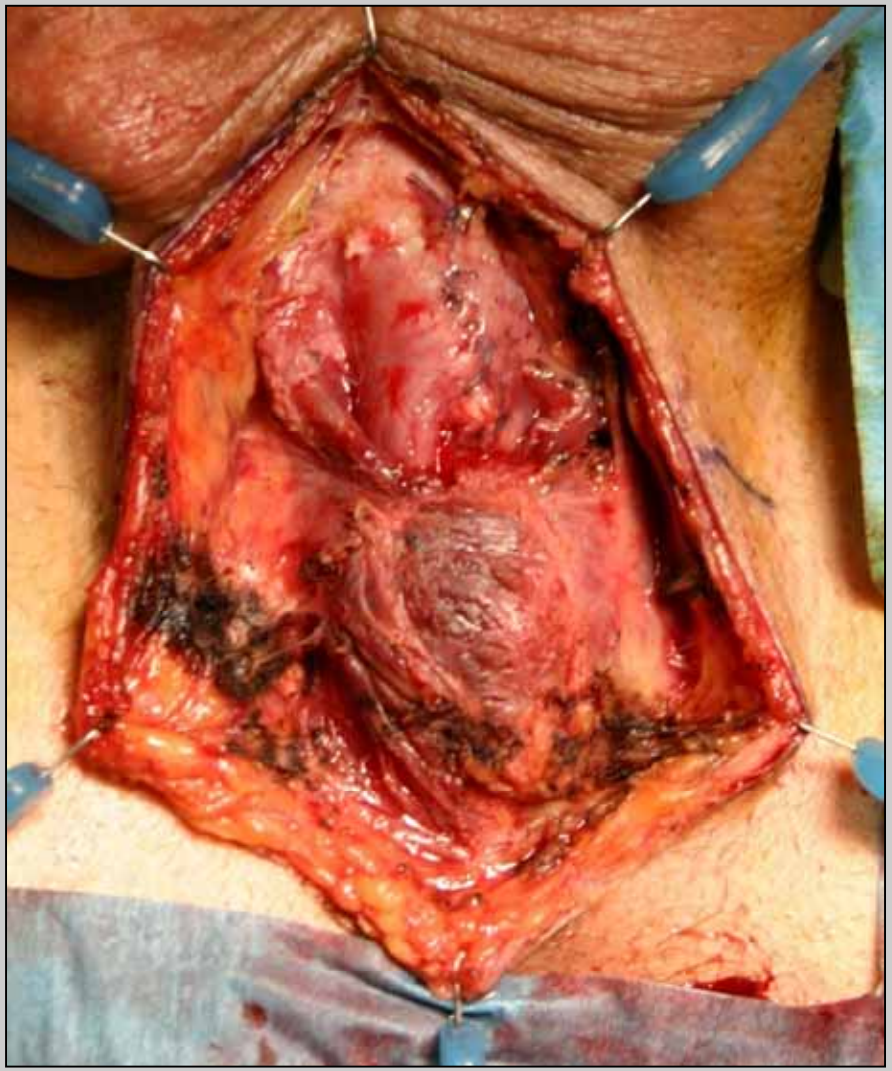

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Conclusions

- **Reconstructive surgery for urethral strictures is continually evolving and the superiority of one approach over another is not yet clearly defined**

- **The reconstructive urethral surgeon must be fully able in the use of different surgical techniques to deal with any condition of the urethra at the time of surgery**

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Next month, this lecture will be fully available on our website

Thank you !