Center for Reconstructive Urethral Surgery

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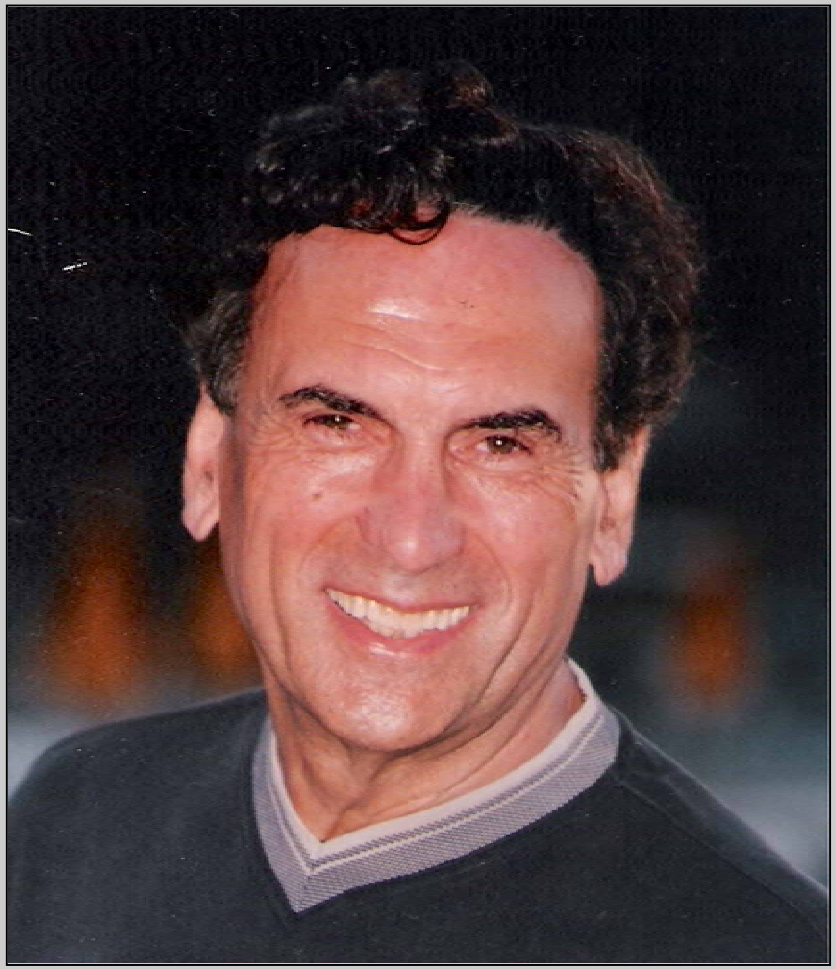
3rd SURGICAL WORKSHOP OF CUGRS



Complex Uro-Genital Reconstructive Surgery

Belgrade – Serbia

29 - 30 October 2010

Center for Reconstructive Urethral Surgery
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Why do we have failures in urethral reconstructive surgery?

How to avoid complications in urethral surgery

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Complications of urethral surgery

Positioning-related complications

Oral complications

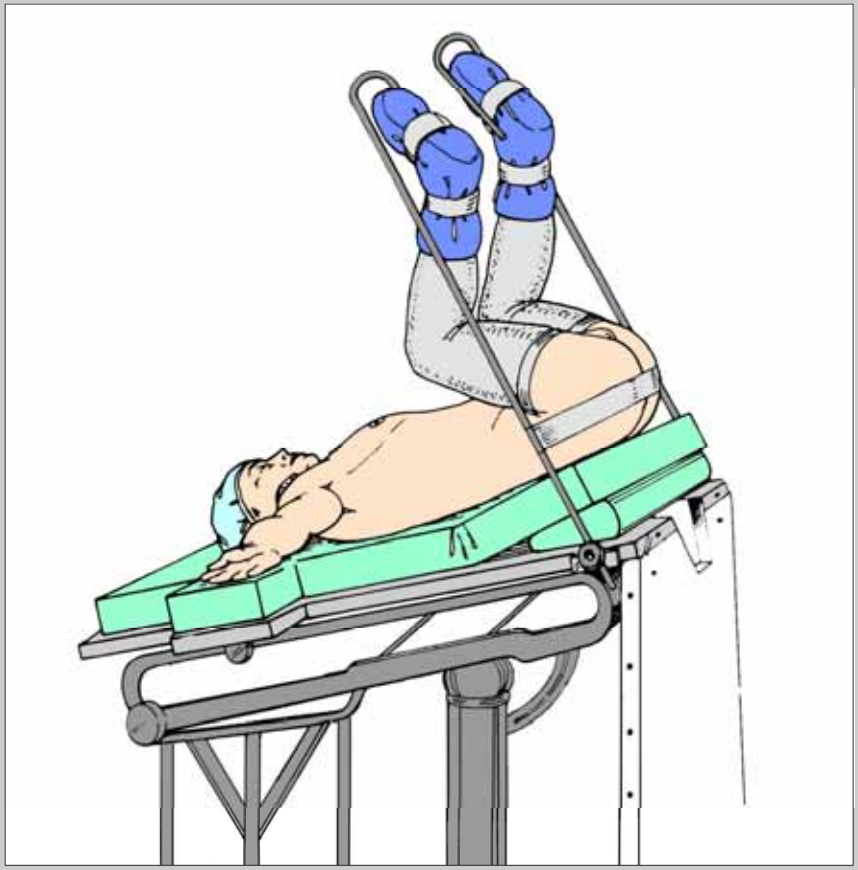
Genito-urinary complications

- **Urinary function**
- **Sexual function**
- **Aesthetic appearance of genitalia**

Positioning-related complications

- **Lower extremity neuropathy** (sciatic, femoral, other)
- **Compartmental syndrome**
- **Rhabdomyolysis**
- **Peroneal nerve neuropraxia**
- **Pulmonary embolism**
- **Deep venous thrombosis**

Positioning-related complications



High lithotomy position

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In 185 patients who underwent urethroplasty using high lithotomy position, 18 (10%) position related complications were identified, 4 (22%) of wich were severe:

- **Neuropraxia 1**
- **Rhabdomylisis 1**
- **Compartmental syndrome 2**

J Urol 2000, 164: 360-363

The risk of position related complications during urethral reconstruction is directly proportional to the duration of high lithotomy positioning.

Procedures of less than 5 hours in duration had minimal risk.

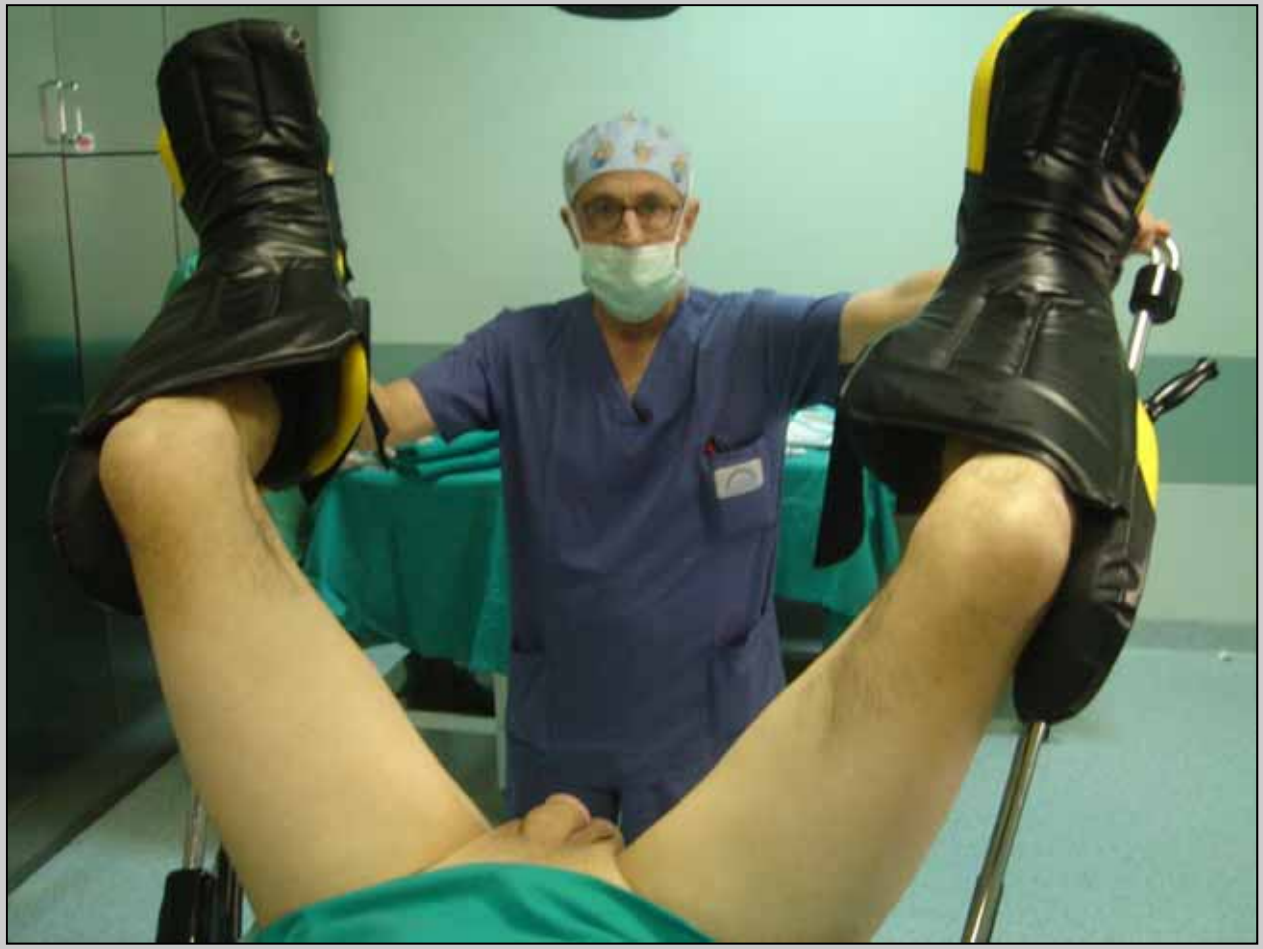
J Urol 2000, 164: 360-363

Positioning-related complications

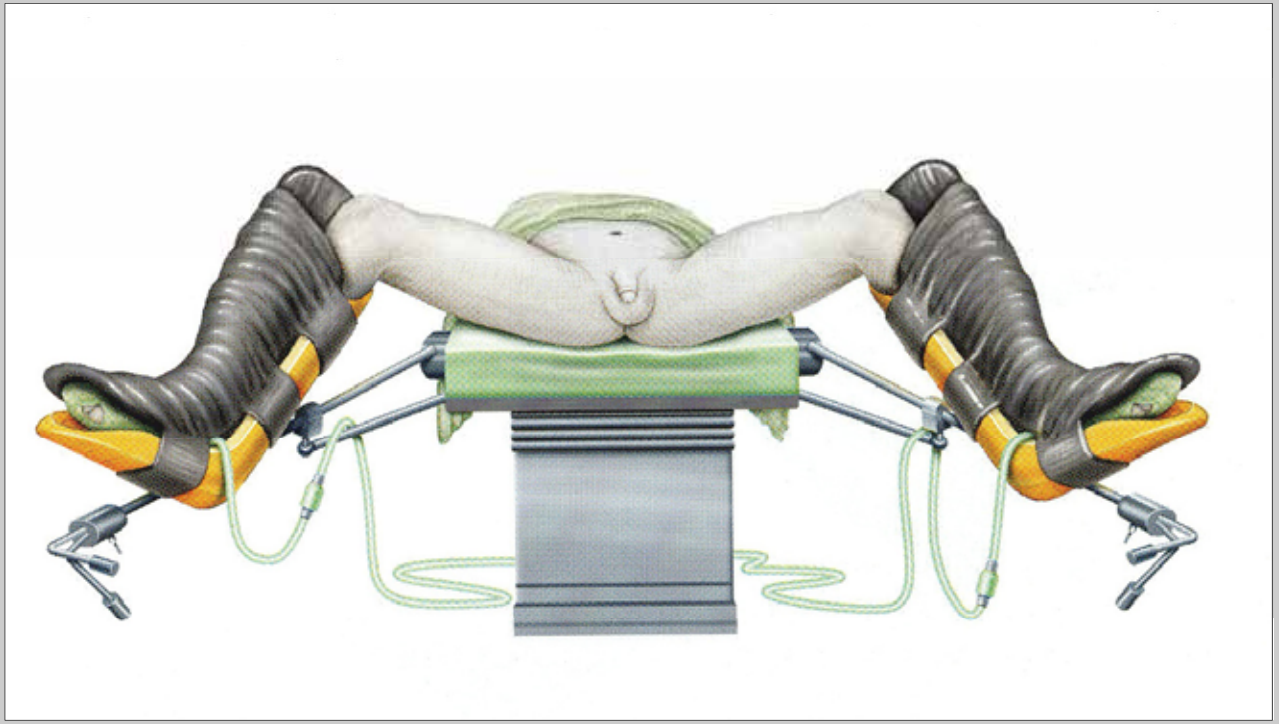
Simple lithotomy position

Patient positioning should not to be delegate to a nurse

The surgeon is responsible of the patient position

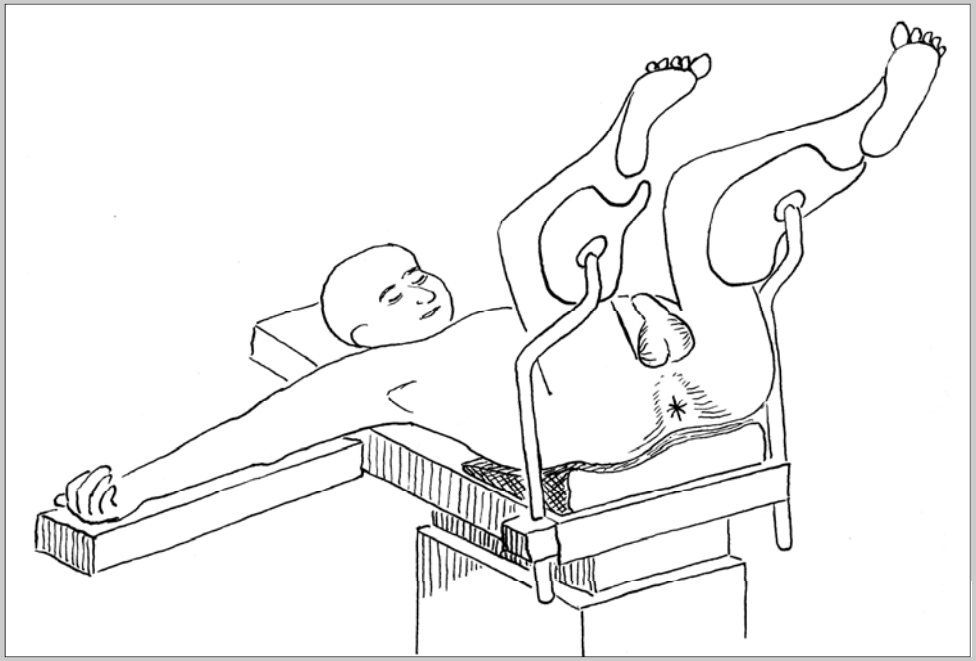


Positioning-related complications



Mundy's social position

Positioning-related complications



Standard stirrups

Preparation of the patient

Allen stirrups

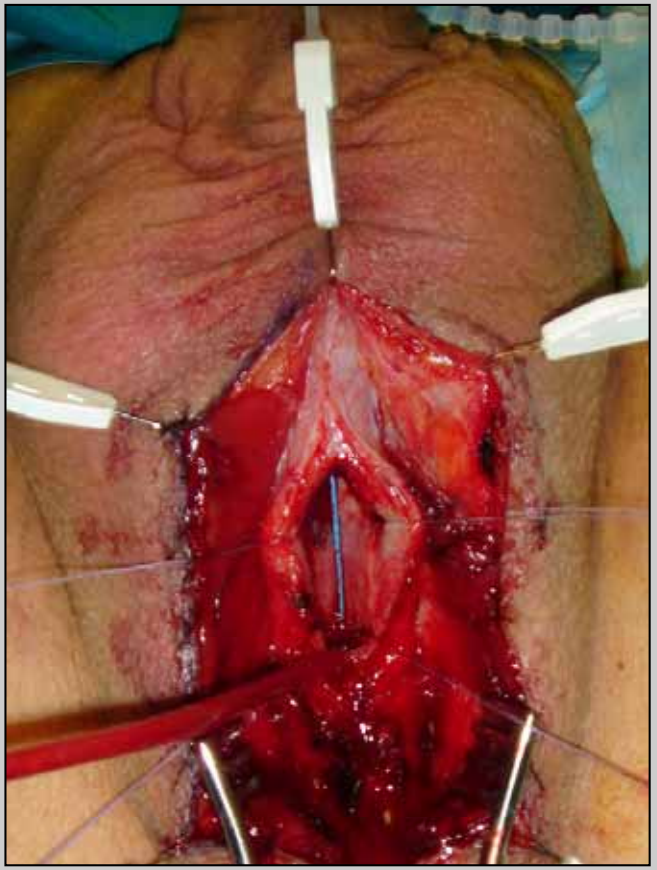
Positioning-related complications

Sequential inflatable compression sleeves

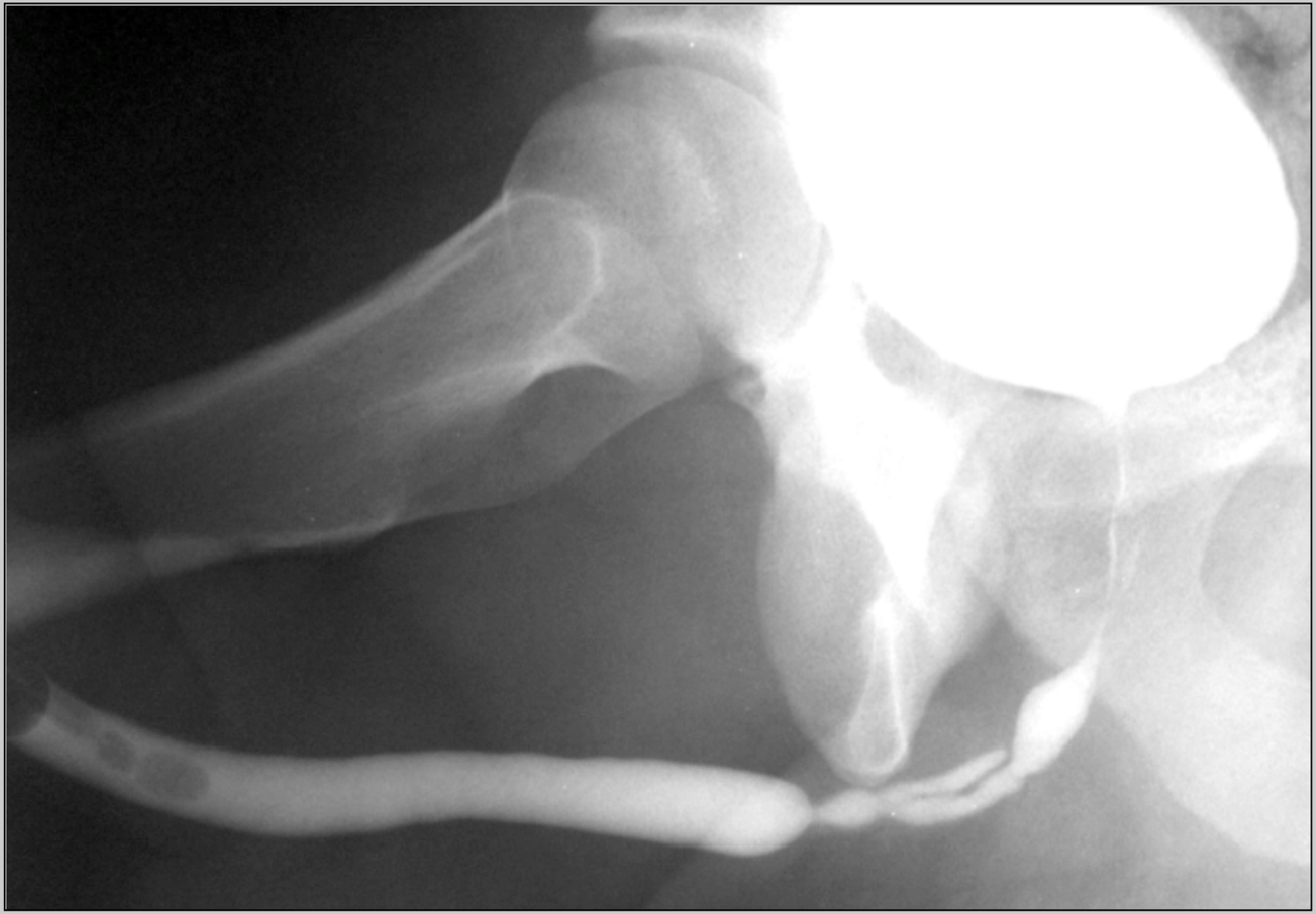
Preparation of the patient for bulbar urethroplasty

Pre-operative urethroscopy

Preparation of the patient for bulbar urethroplasty



Insert Sensor guide wire



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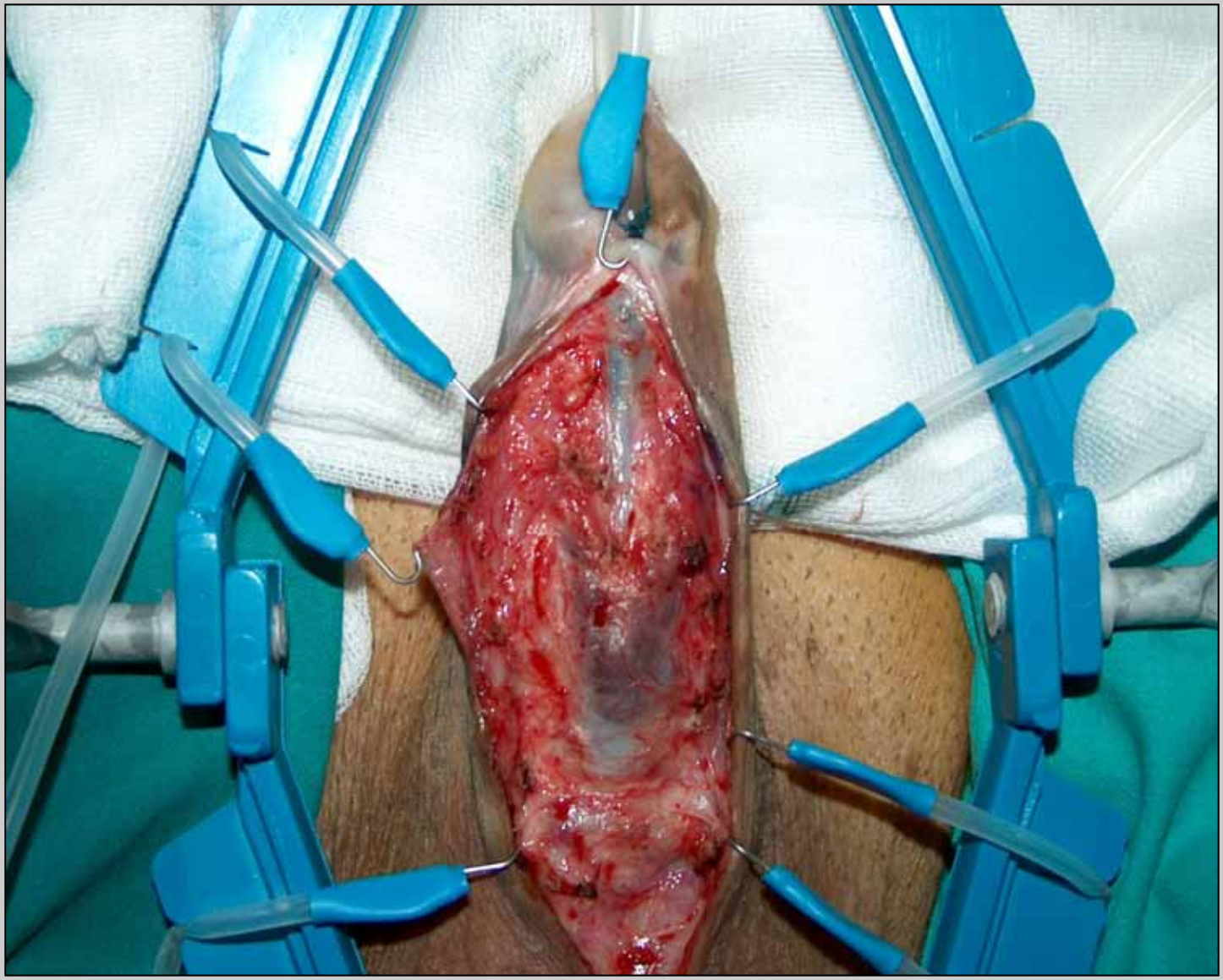
Preparation of the patient for bulbar urethroplasty

Inject methylene blue inside the urethra

(G. Webster)



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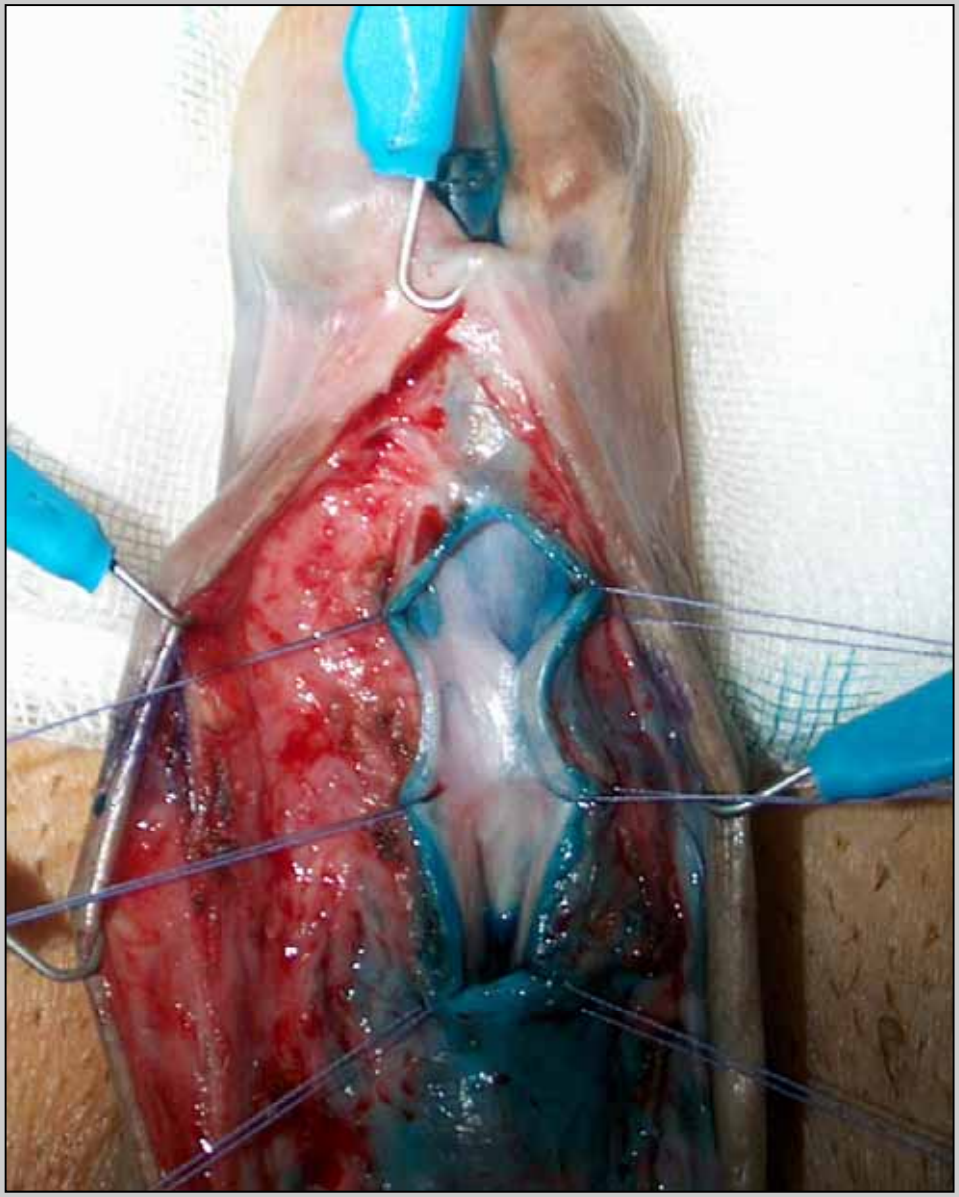
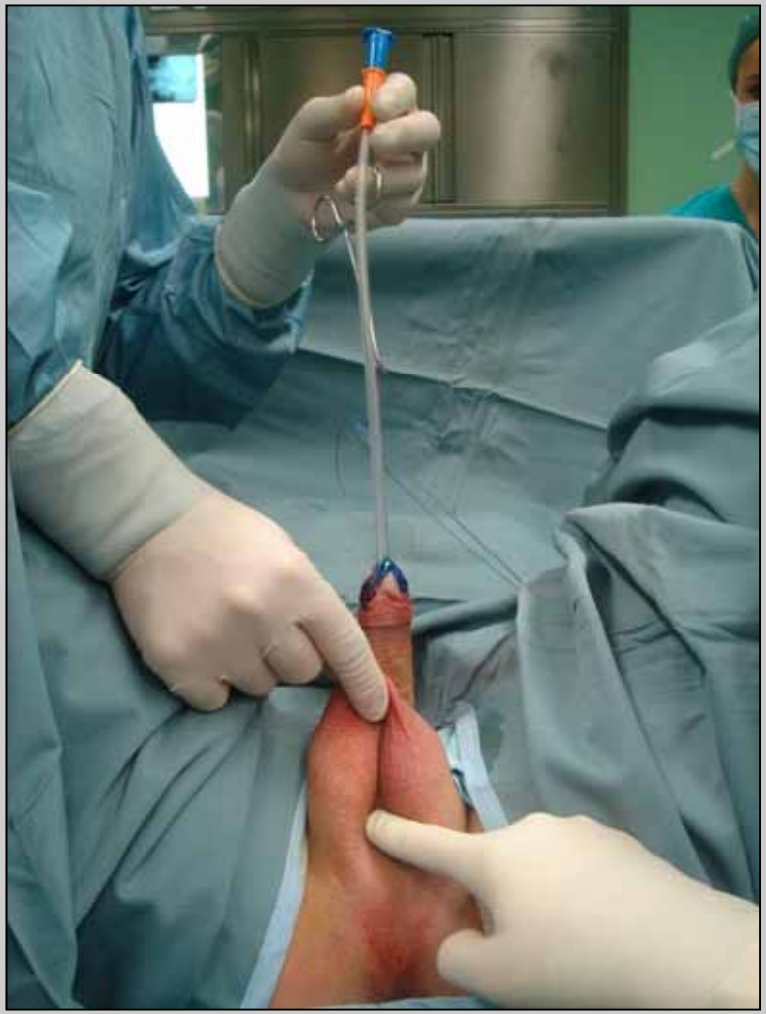
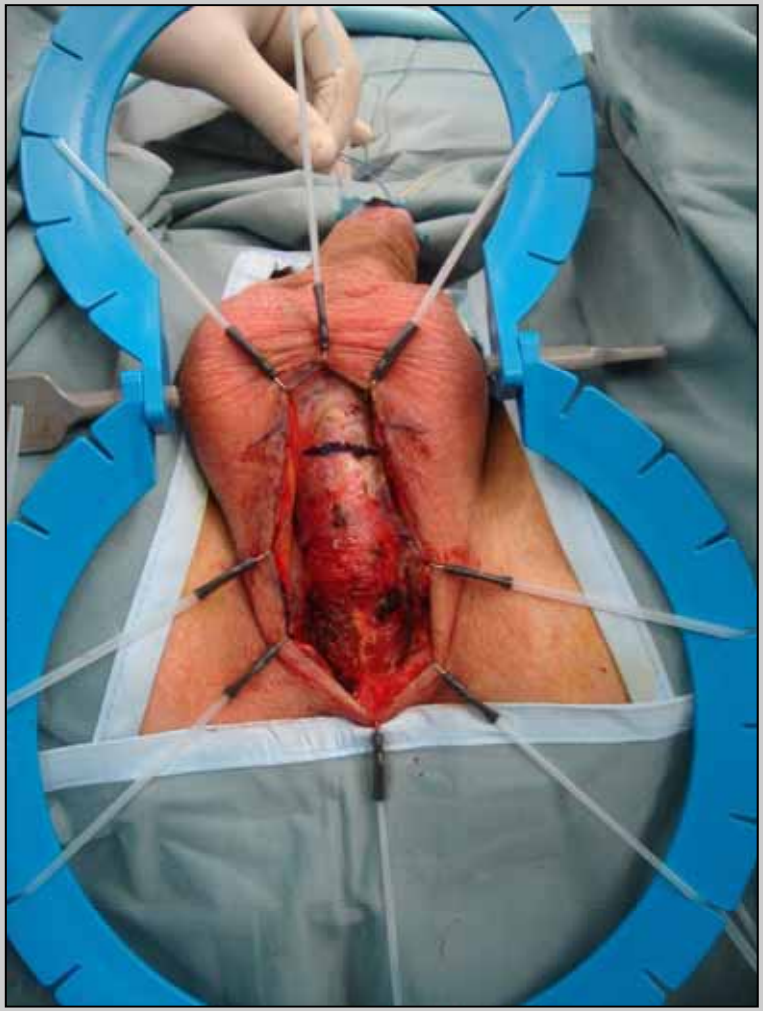


Preparation of the patient for bulbar urethroplasty



Calibrate the distal urethra



Identify the distal stricture site

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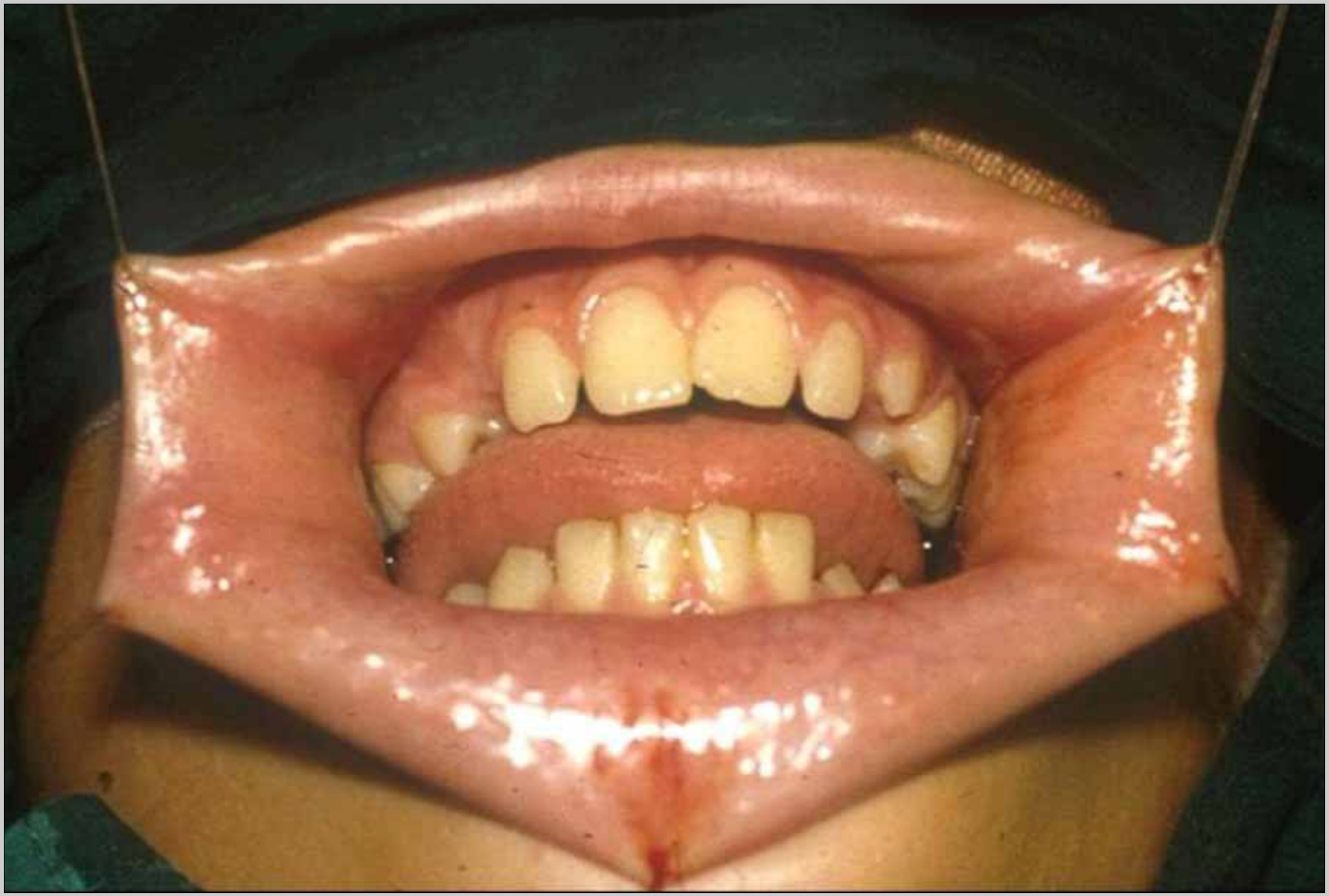
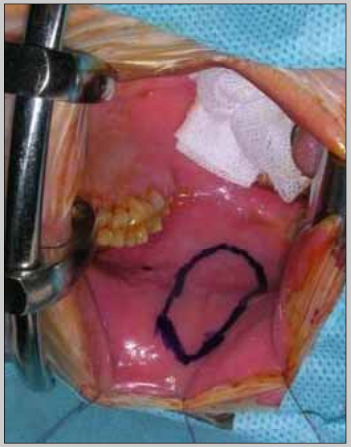
Oral complications

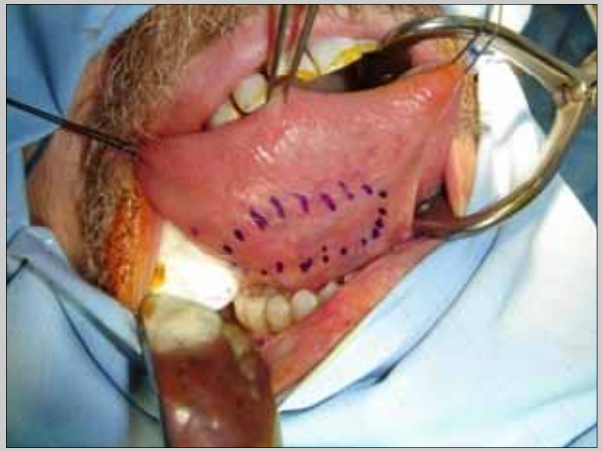


Harvesting oral mucosa: how to avoid complications



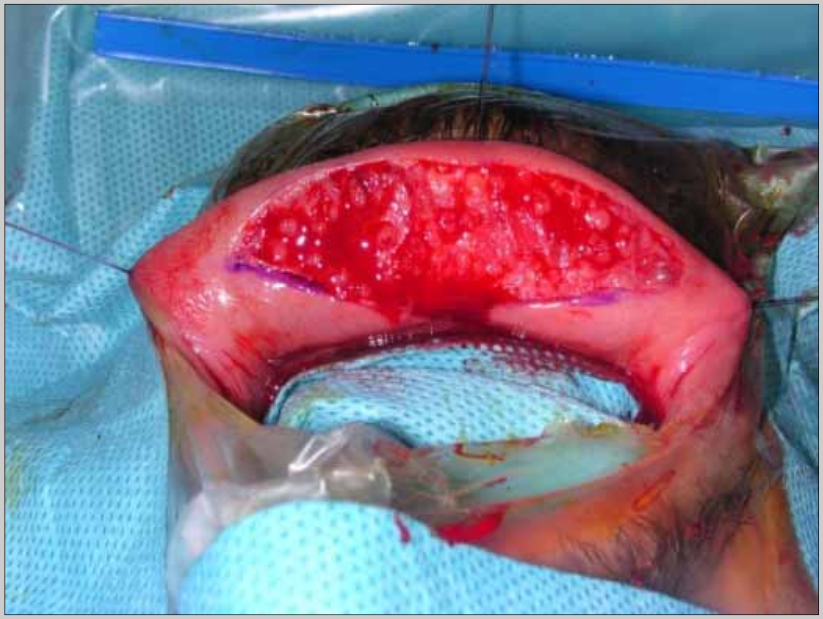
cheek

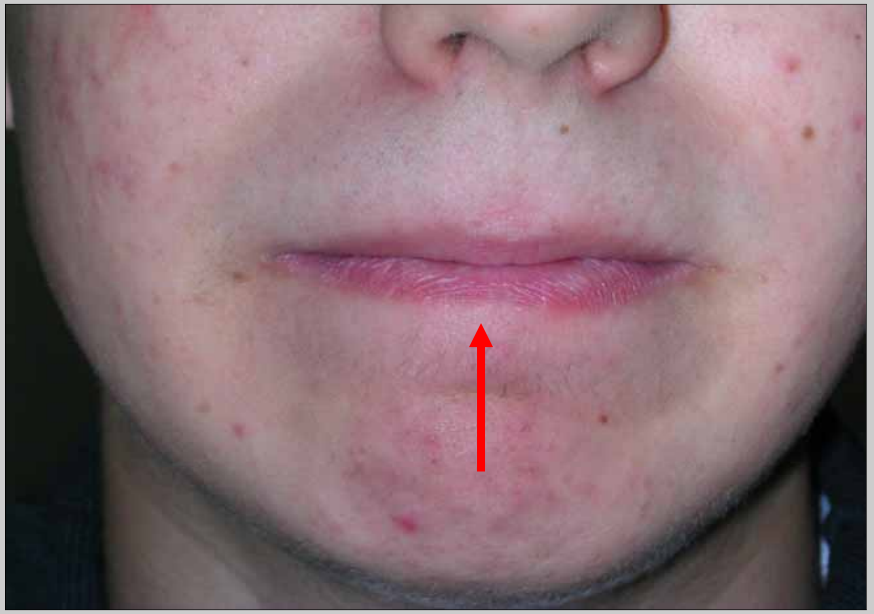
lip



tongue

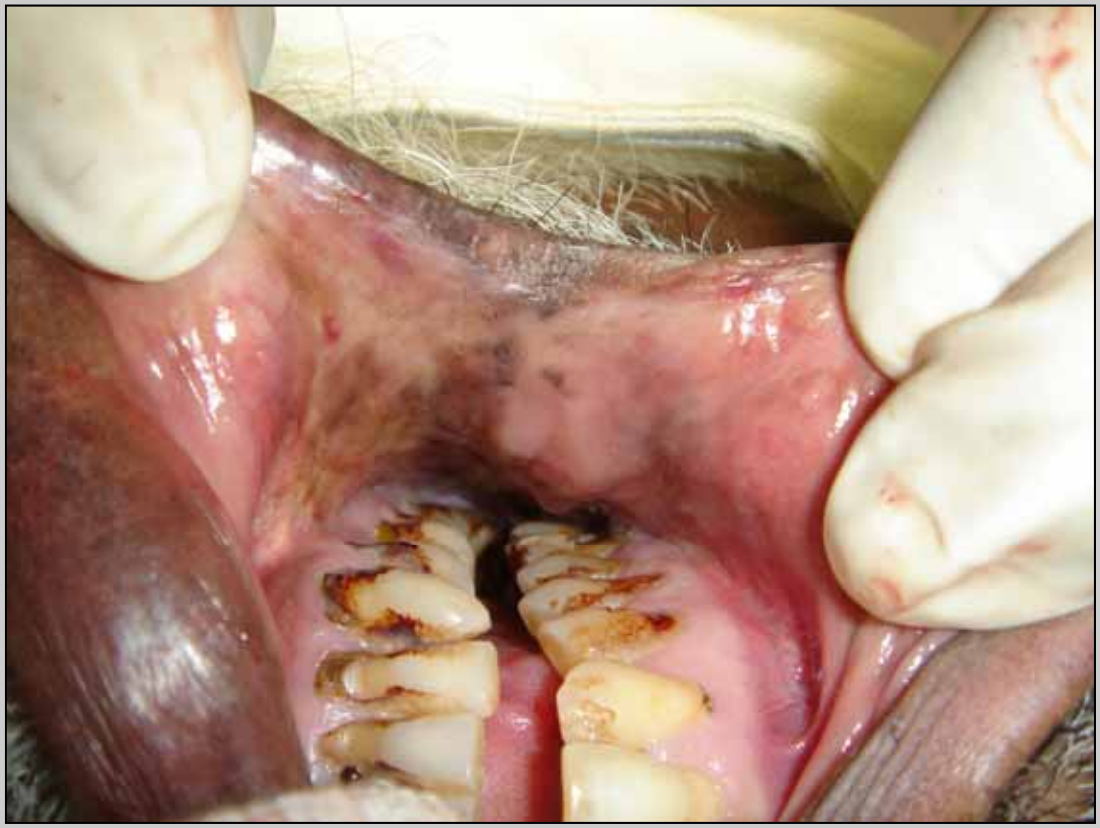
Lip harvest





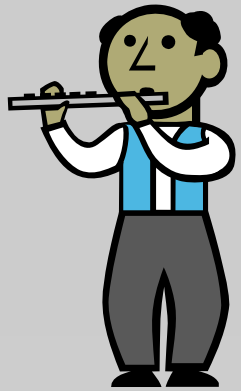
- **Negative aesthetic consequences**
- **Unsatisfactory postoperative patient acceptance**

Site conditions which do not permit oral mucosa harvest

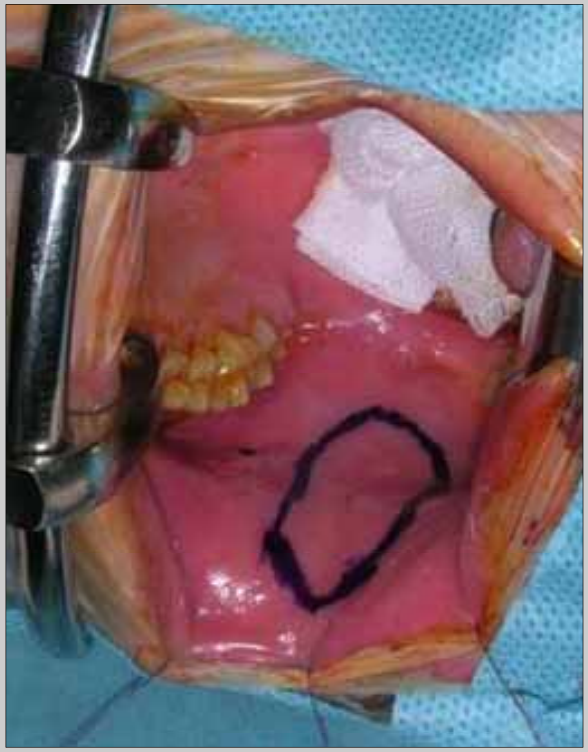


Site conditions which do not permit oral mucosa harvest

- Patients who have an infectious disease affecting the mouth (candida, varicella-virus or herpes virus)
- Patients with pathological oral dermatosis
- Patients with morsicatio buccarum (cheek chewing)
- Patients who had previous surgery on the mouth or tongue
- Patients who play a wind instrument
- Patients who chew tobacco or pan masala (India)



Harvesting oral mucosa from the cheek: how to avoid complications



cheek

Surgical technique

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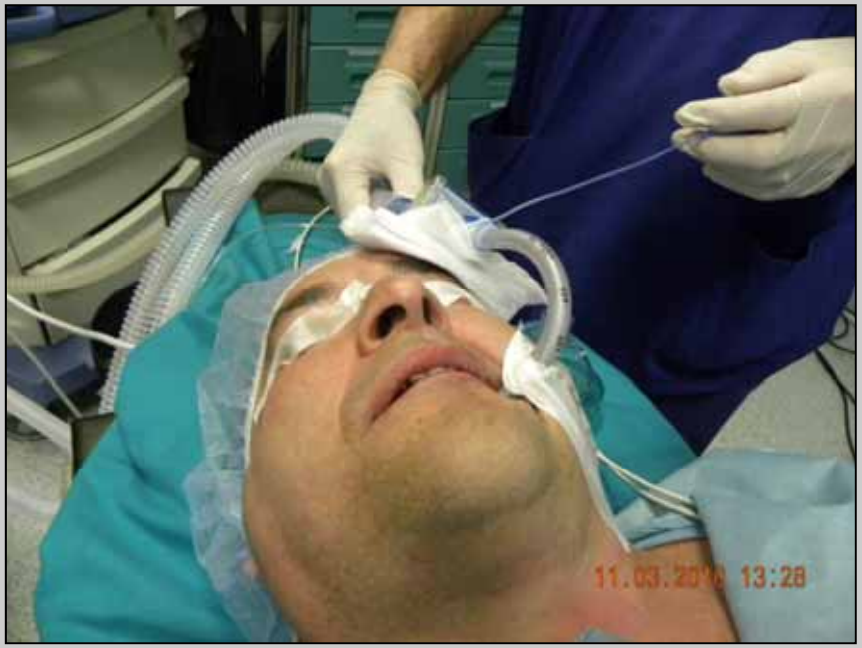
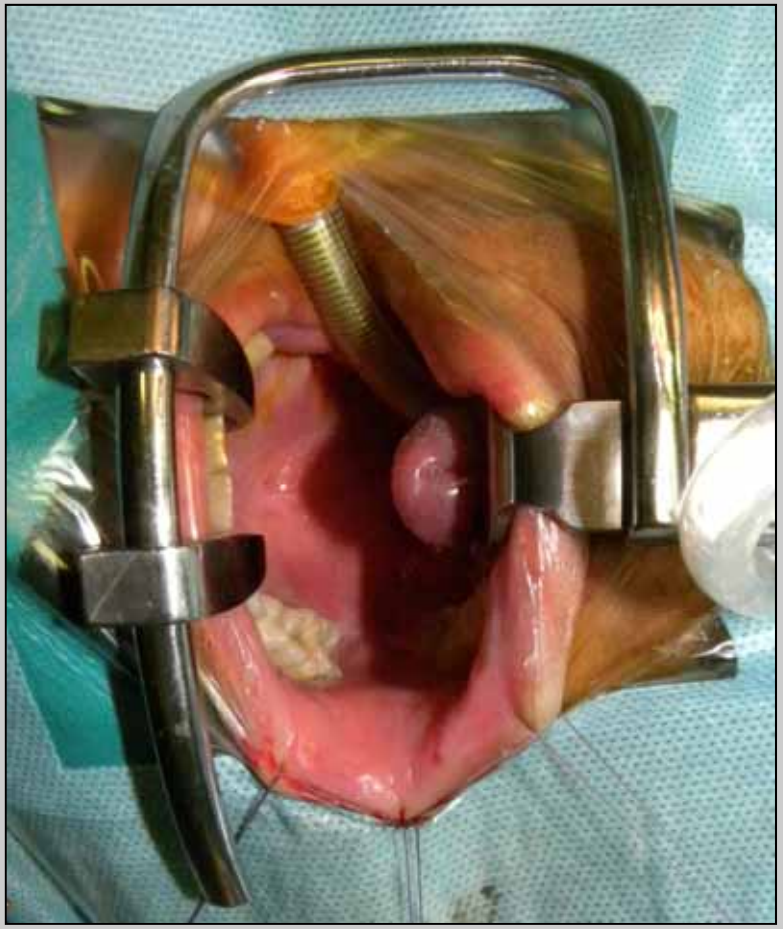
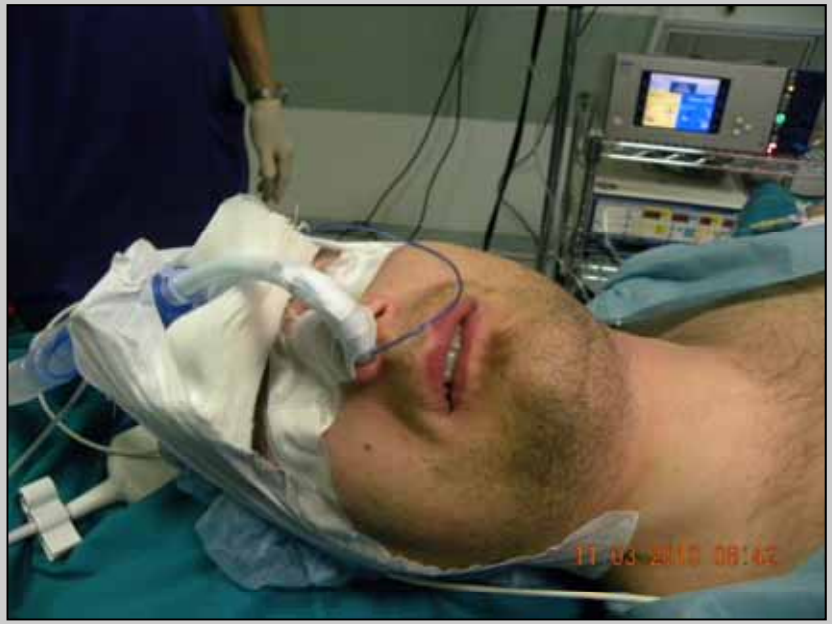
Nasal or oro-tracheal tube?

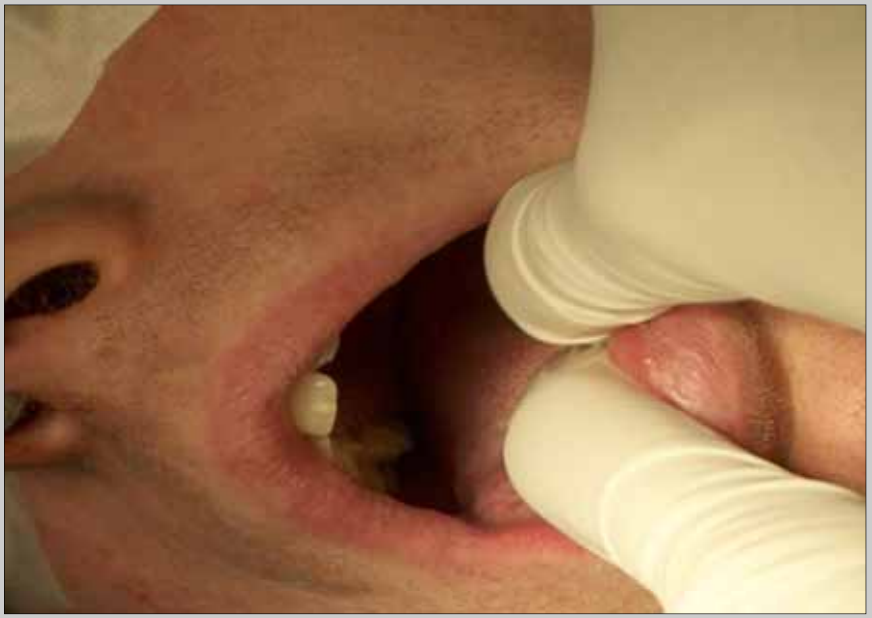
Oro-tracheal tube





When the patient is intubated through the nose, the mouth is completely free

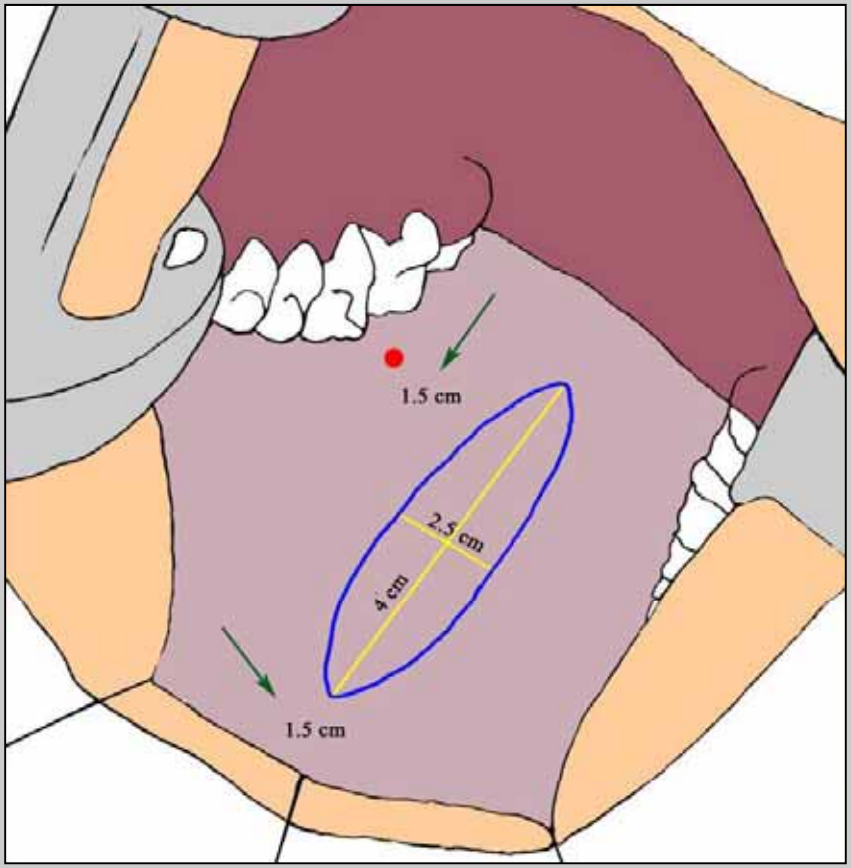


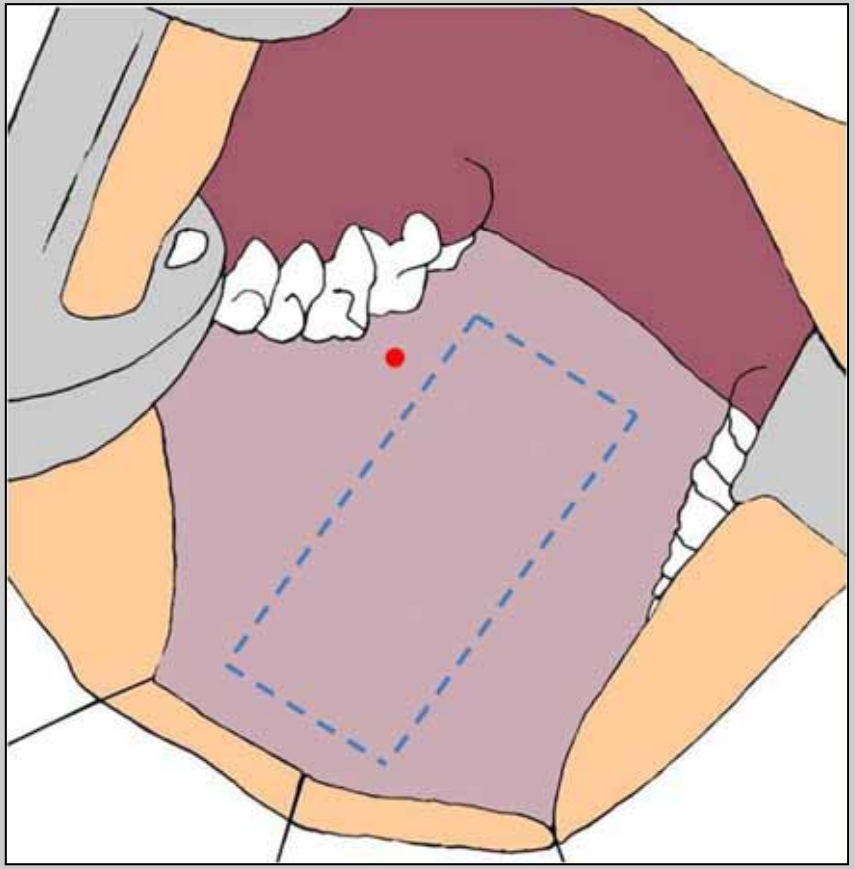


Nasal intubation is suggested:

- **At the beginning of the learning curve**
- **In patient with small mouth opening**

Ovoid or rectangular shape ?





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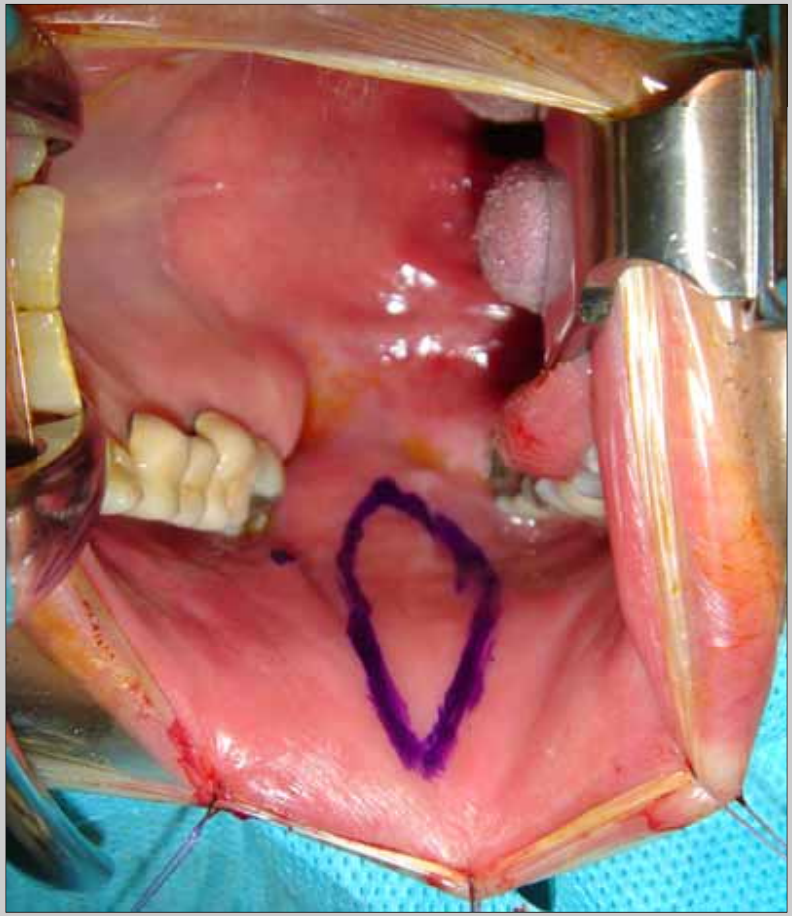
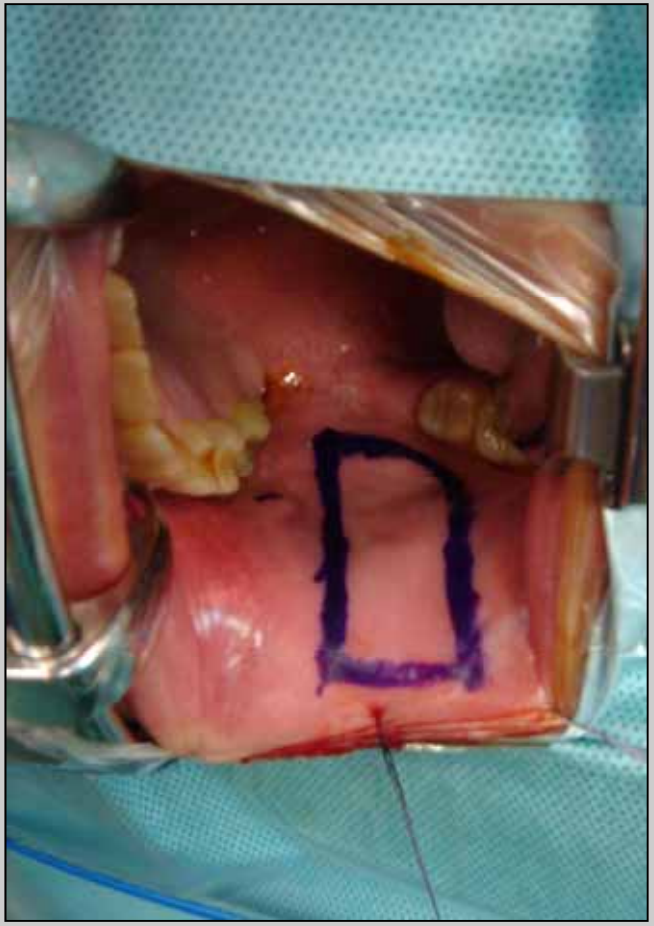
Ovoid or rectangular shape ?





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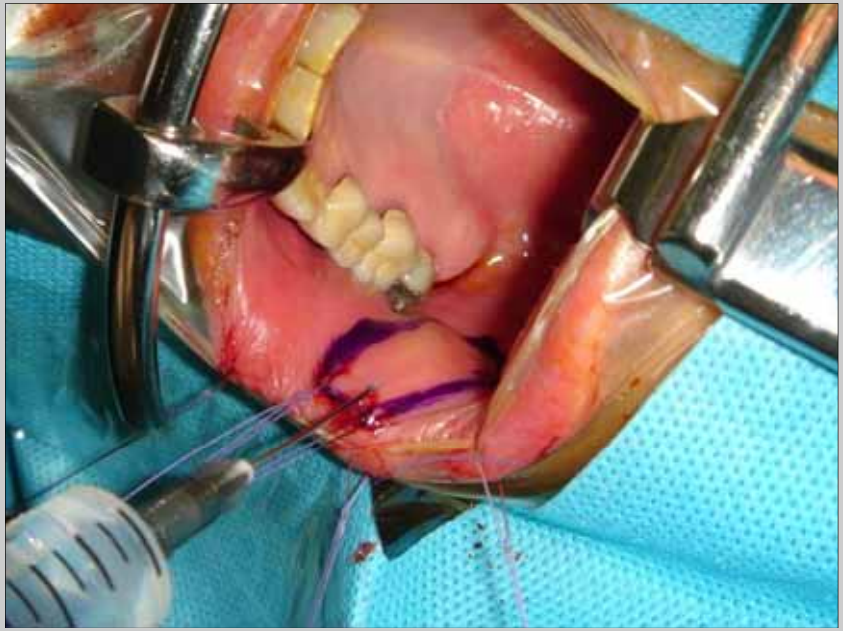

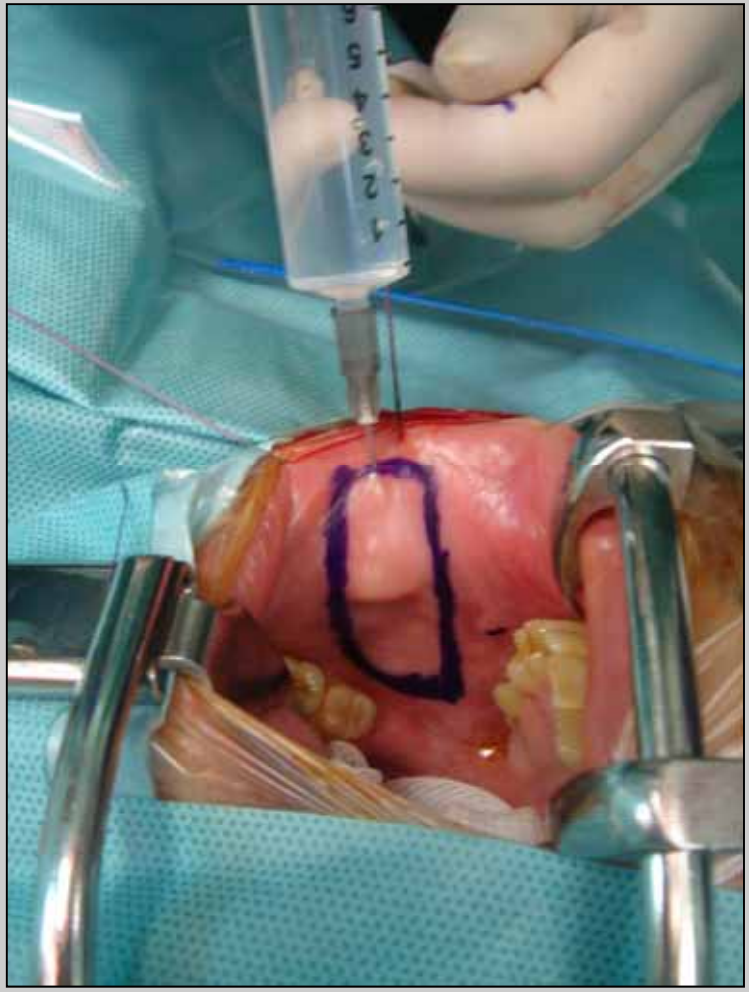

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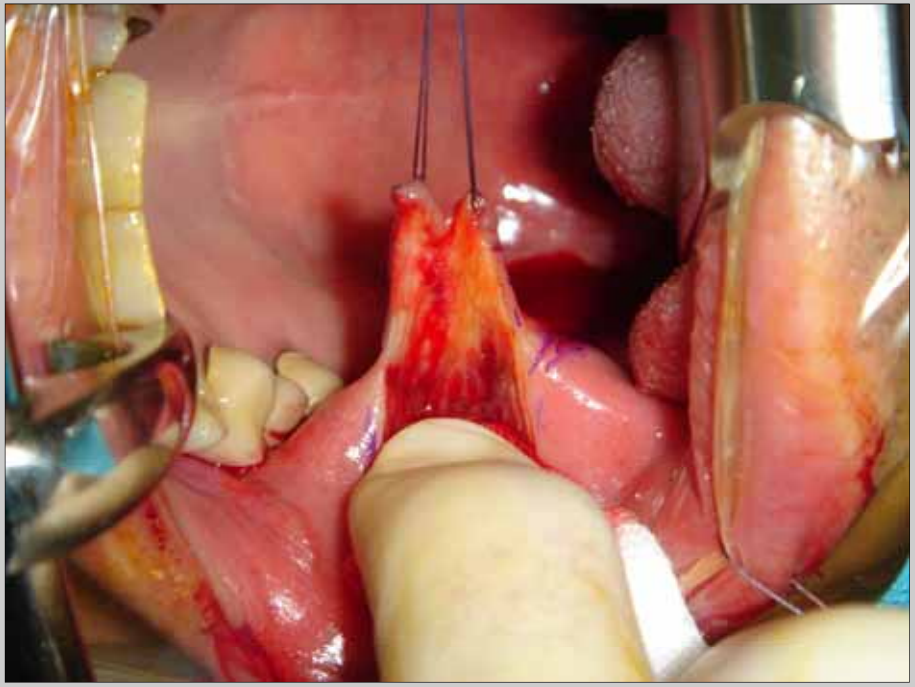

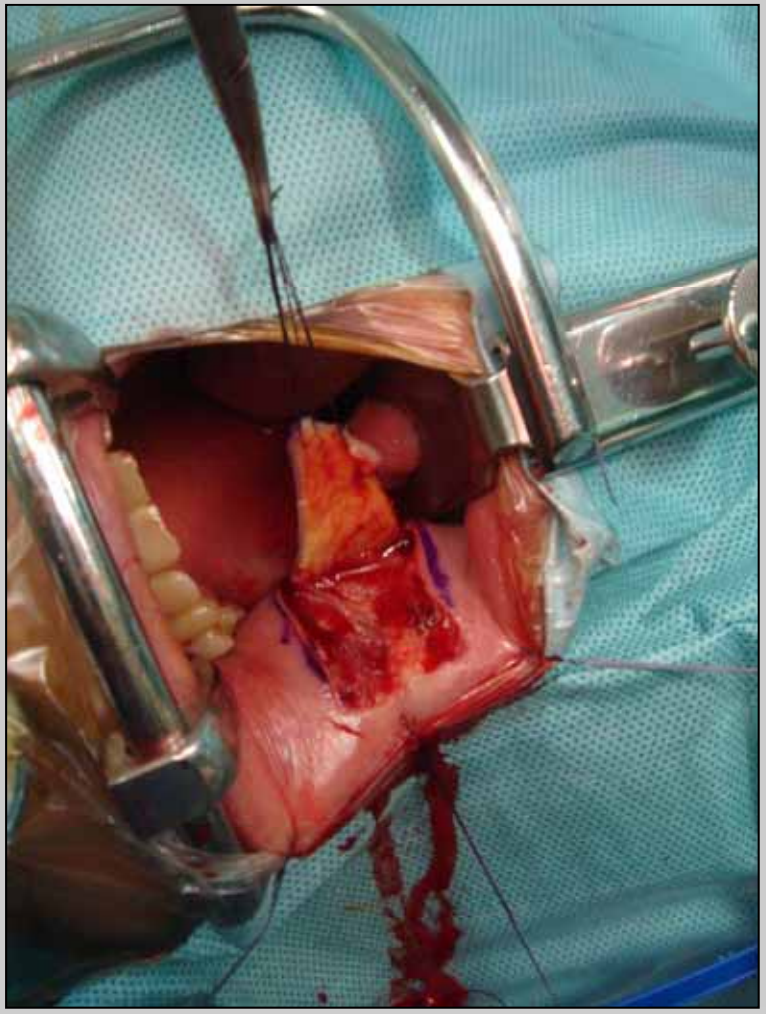

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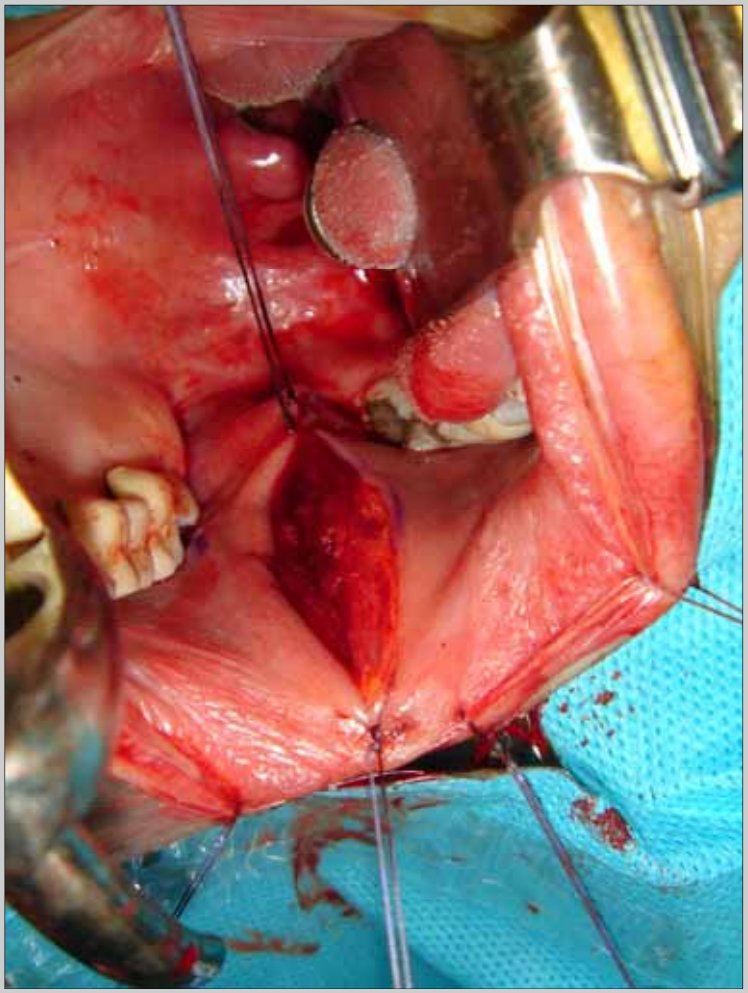

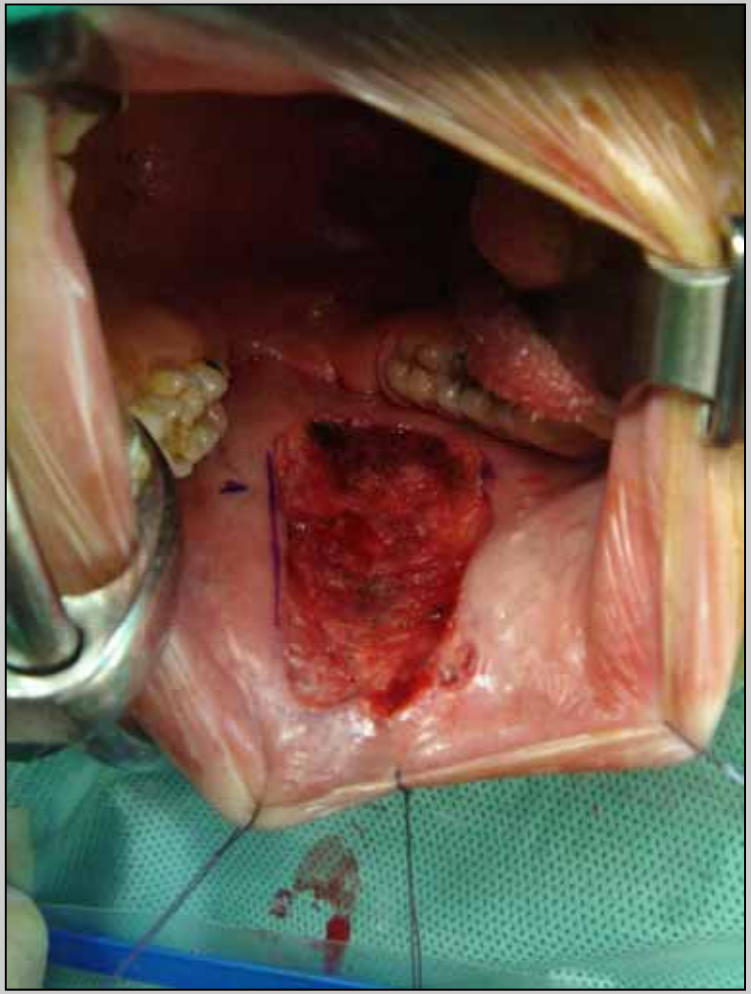

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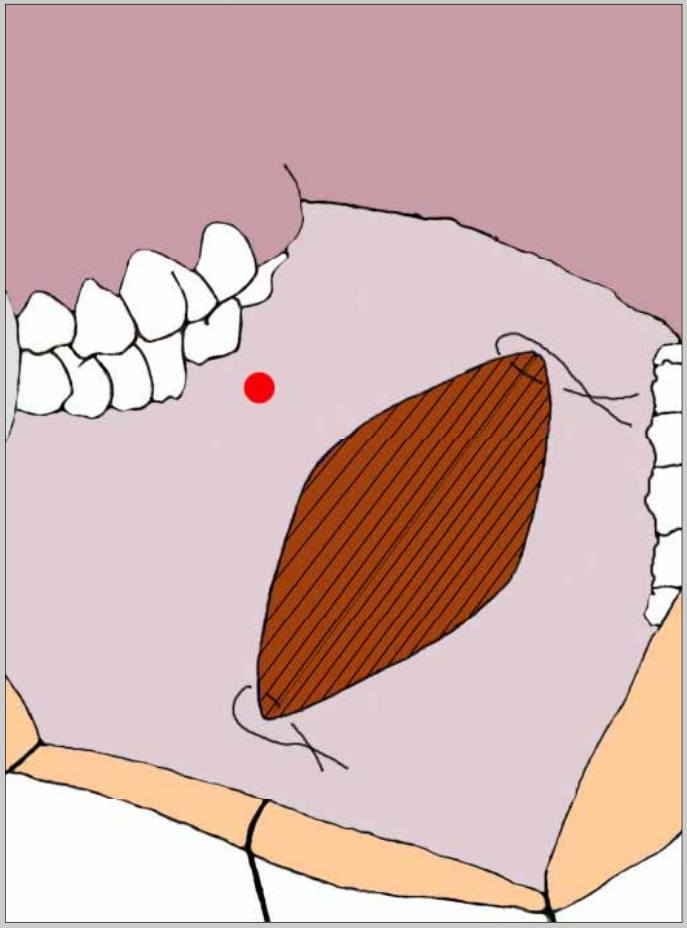
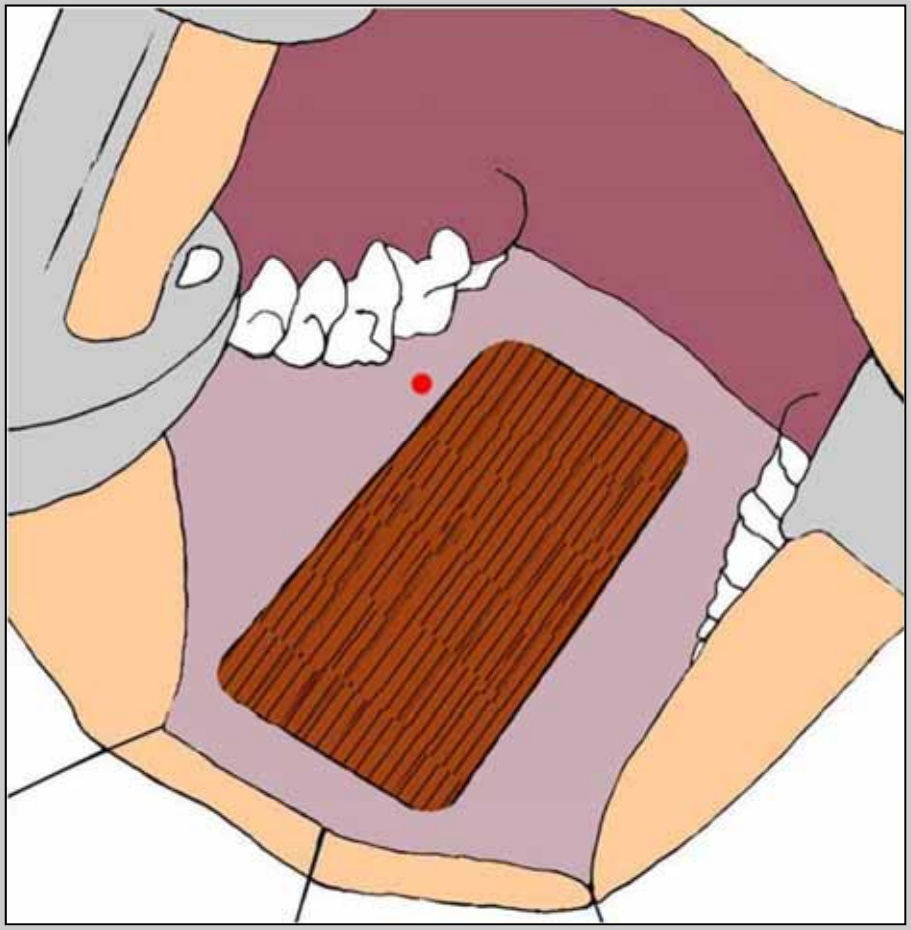
Close the harvesting site ?





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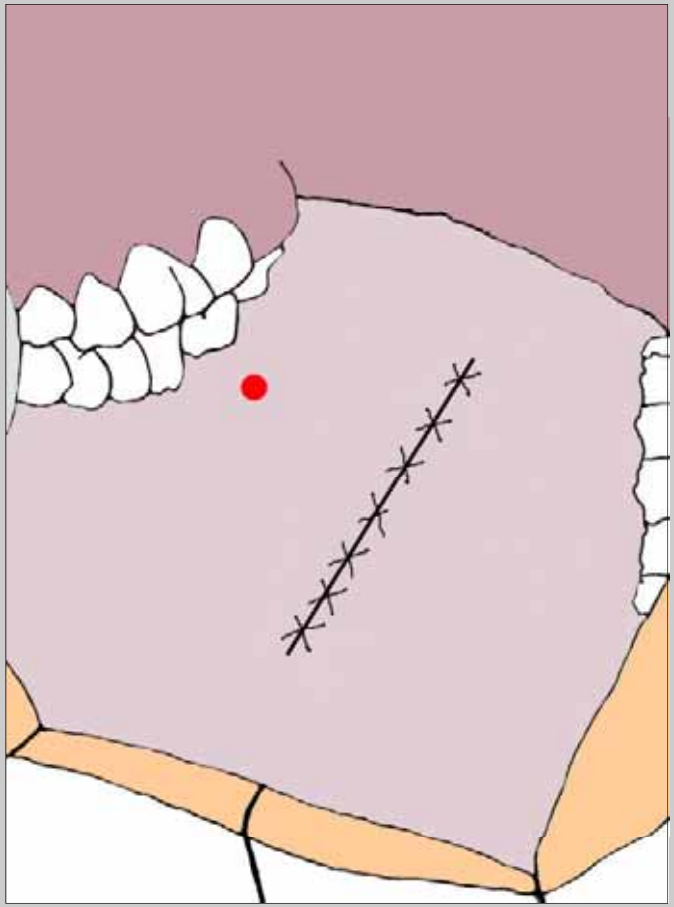
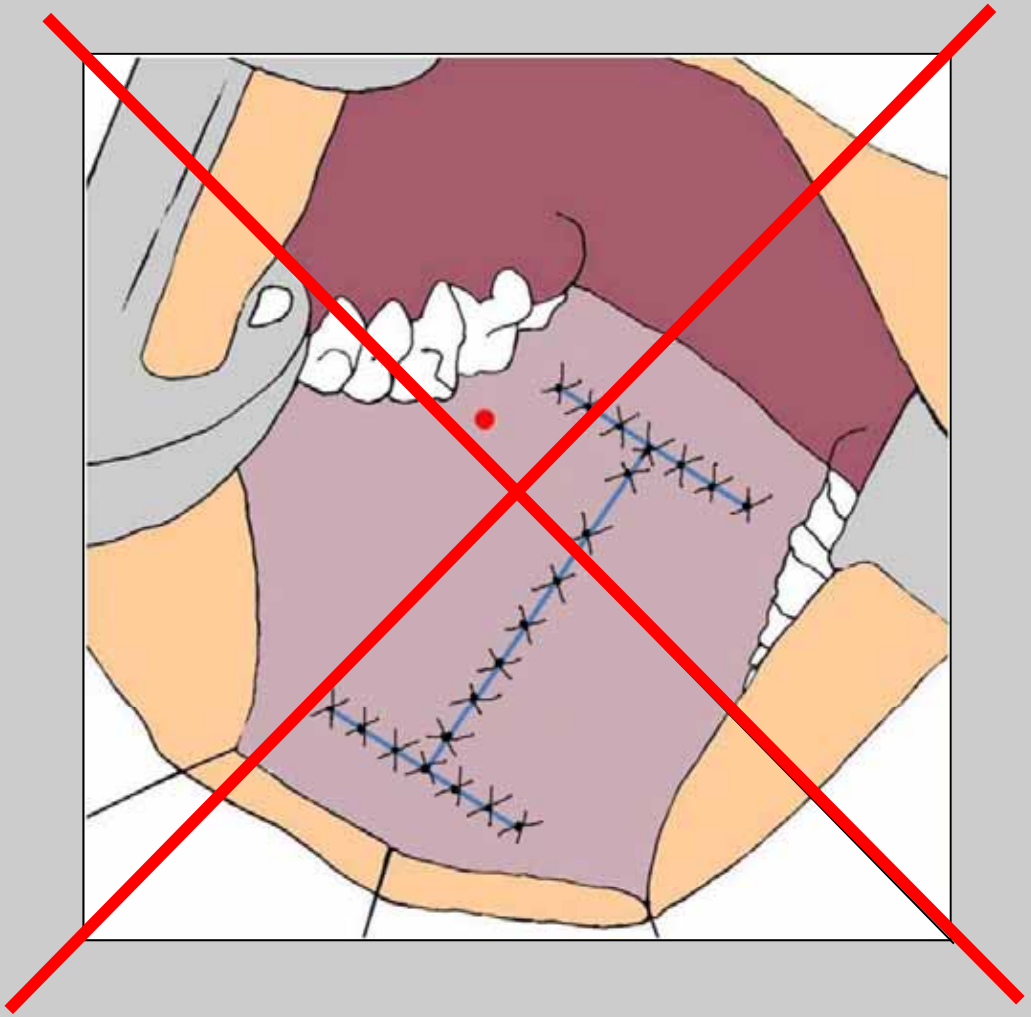


Yes



No

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Evaluation of early and late complications and patient satisfaction in 350 patients who underwent oral graft harvesting from a single cheek using a standard technique (ovoid shape graft - closure of the harvesting site) in a Referral Centre experience

Eur Urol 2010, 58: 33-41

Early complications

bleeding: 4.3%

pain: score 0 (49.2%), score 1 (36%), score 2 (13.7%), score 3 (1.1%)

swelling: score 0 (33.7%), score 1 (41.2%), score 2 (24.6%) and score 3 (0.5%)

use of anti-inflammatory drugs: 3.7%

Eur Urol 2010, 58: 33-41

Early complications

58.6% **of patients were able to resume a normal diet within 3 days**

31.4% **of patients were able to resume a normal diet within 6 days**

10% **of patients were able to resume a normal diet within 10 days**

Eur Urol 2010, 58: 33-41

Late complications

infection: 1.7%

perioral numbness: for one week (73.4%), for one month (22.9%), for three months (3.7%)

discomfort related to the tightness of suture closure: score 0 (48%), score 1 (40.3%), score 2 (10.9%), score 3 (0.8%)

discomfort due to mouth scar: score 0 (82.8%), score 1 (14.6%), score 2 (2.6%), score 3 (0%)

Eur Urol 2010, 58: 33-41

Late complications

difficulty with mouth opening: **score 0 (98.3%), score 1 (1.4%)**

difficulty with smiling: **score 0 (99.7%), score 1 (0.3%)**

Eur Urol 2010, 58: 33-41

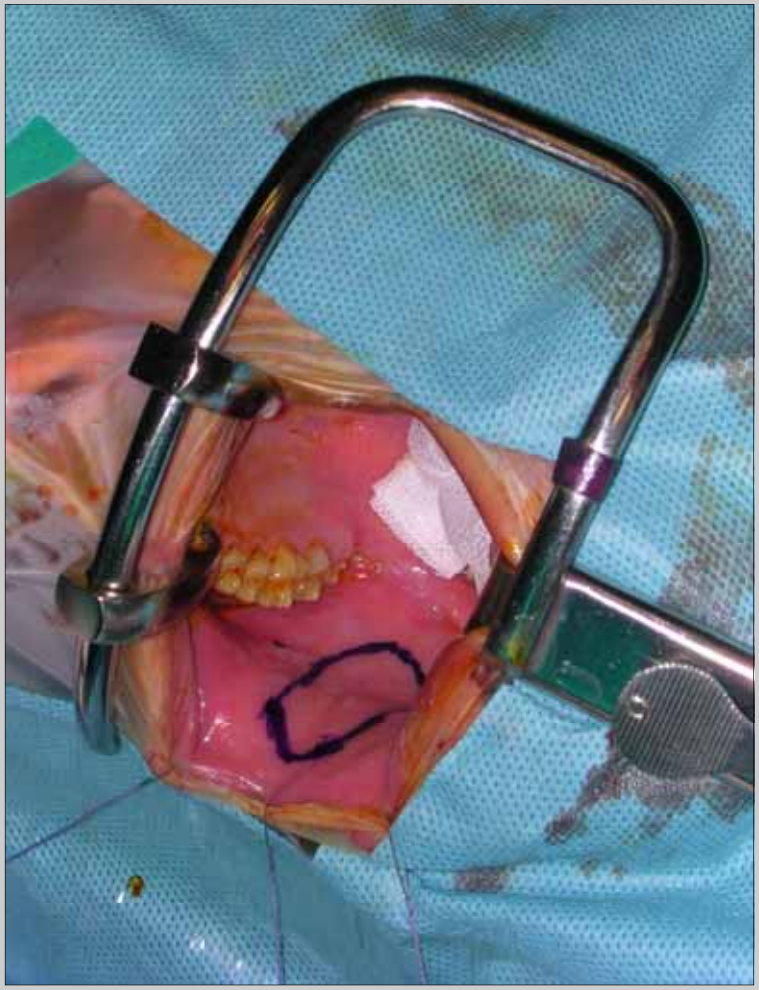
Patient satisfaction

“ Would you do this type of operation again? ”

Yes : 98% of patients

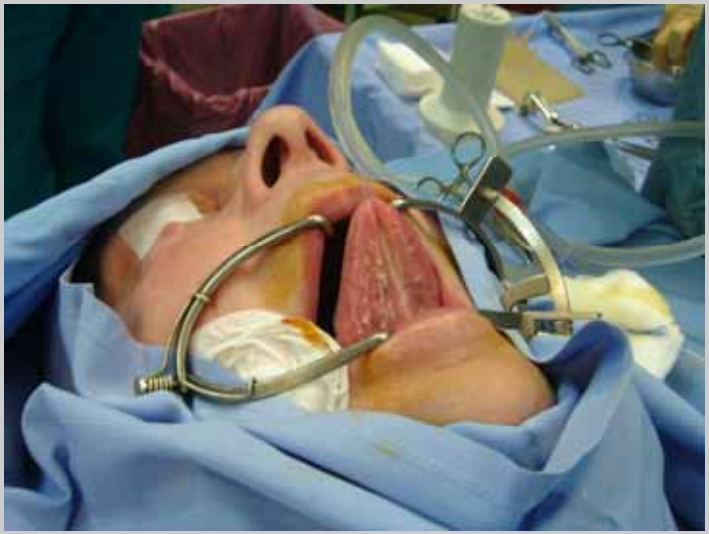
No : 2% of patients

Eur Urol 2010, 58: 33-41



- The cheek represents the best harvesting site in the mouth.
- Low post-operative morbidity and excellent patient satisfaction.
- Numerous articles reported in the literature.

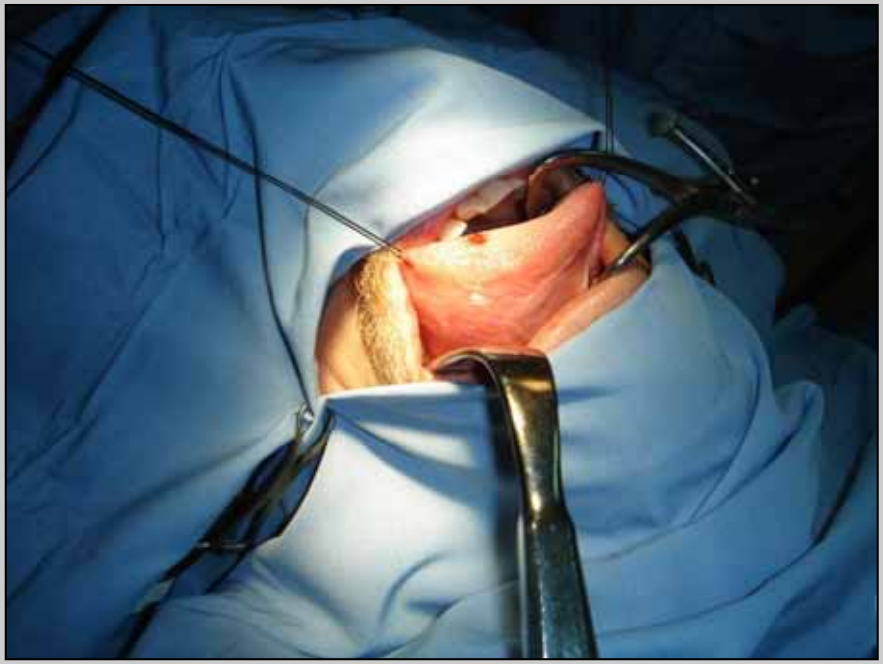
Harvesting mucosa from the tongue: how to avoid complications



tongue

Surgical technique

Harvesting mucosa from the tongue



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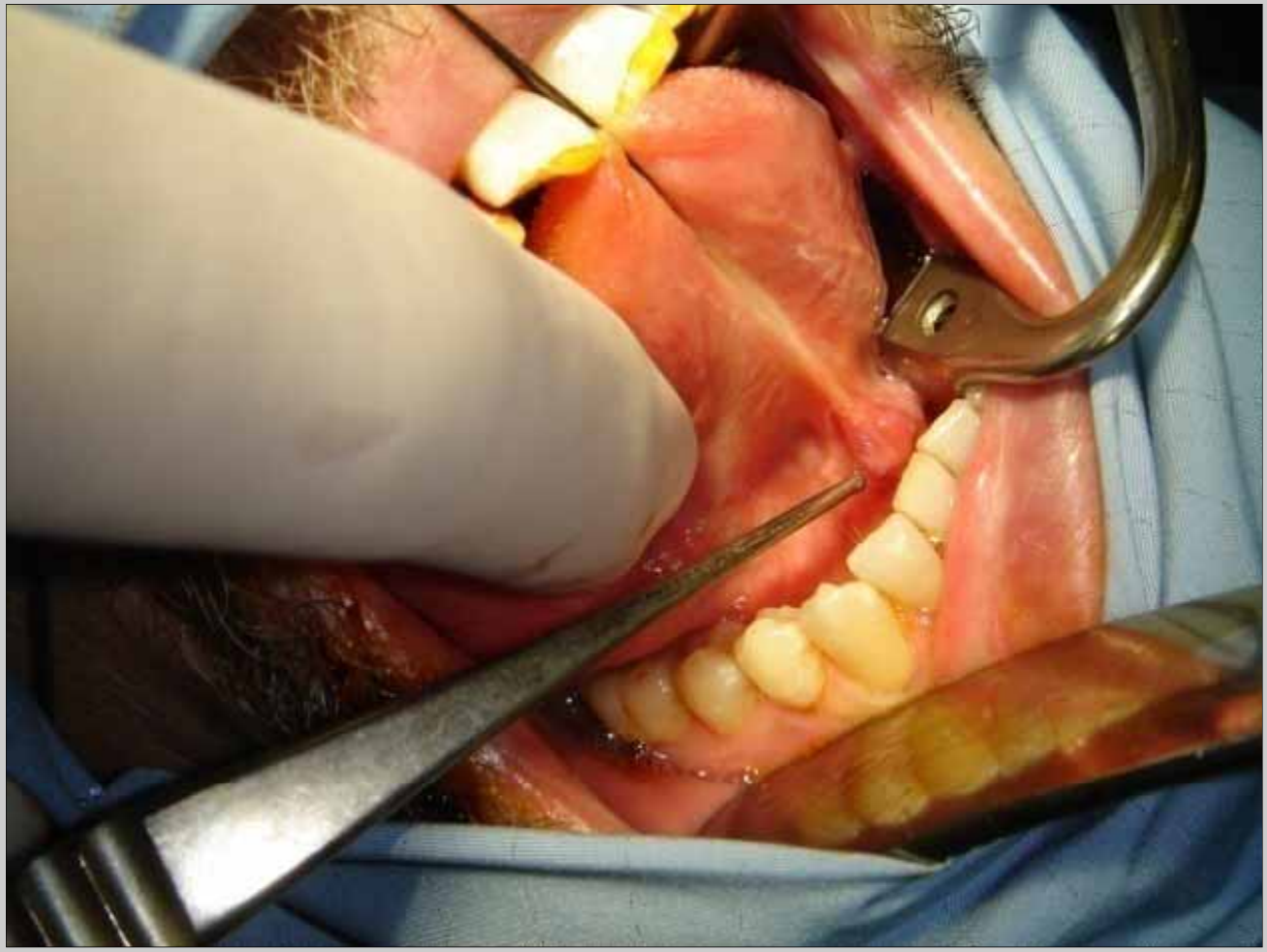
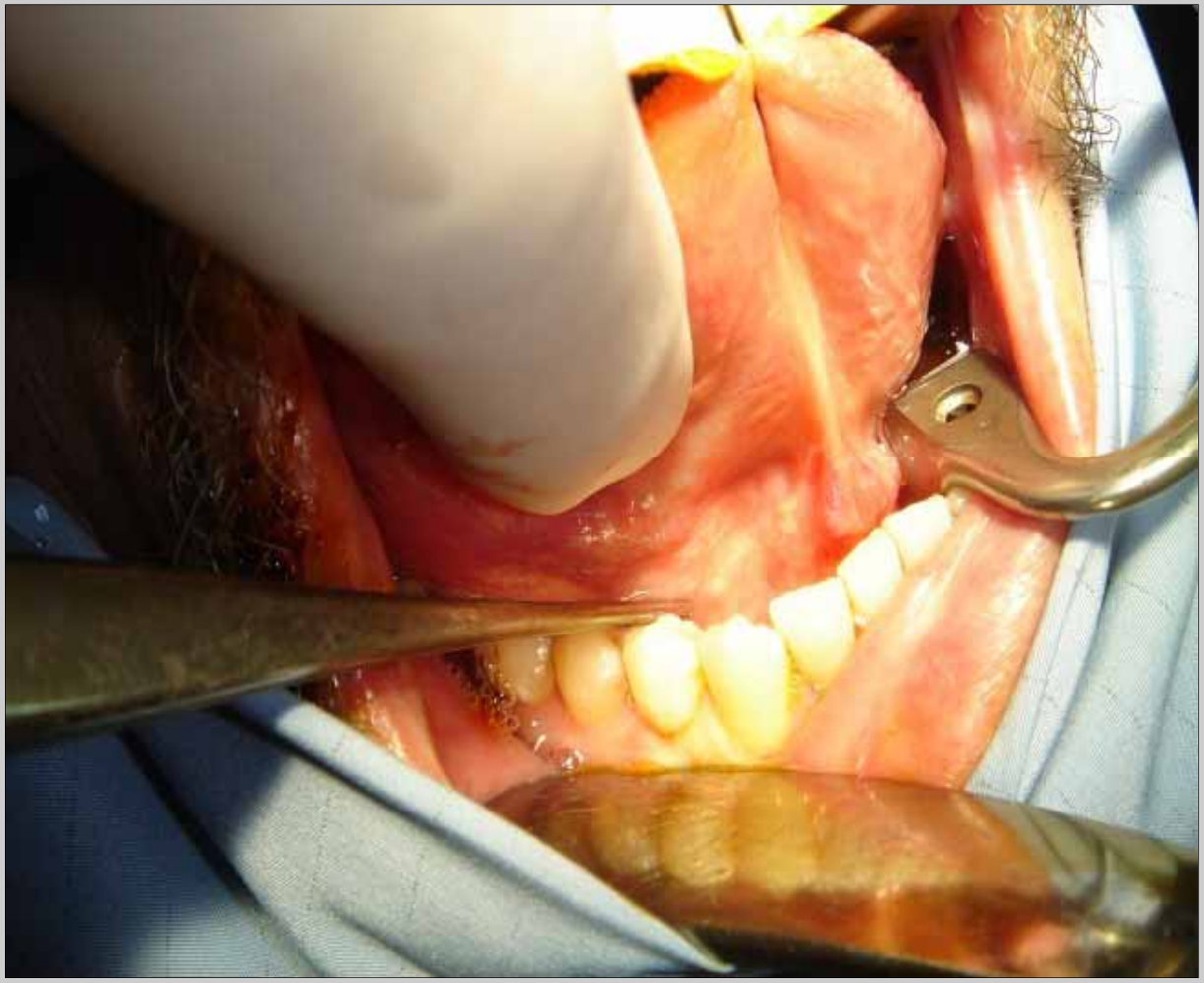


Wharton’s duct



Lingual nerve

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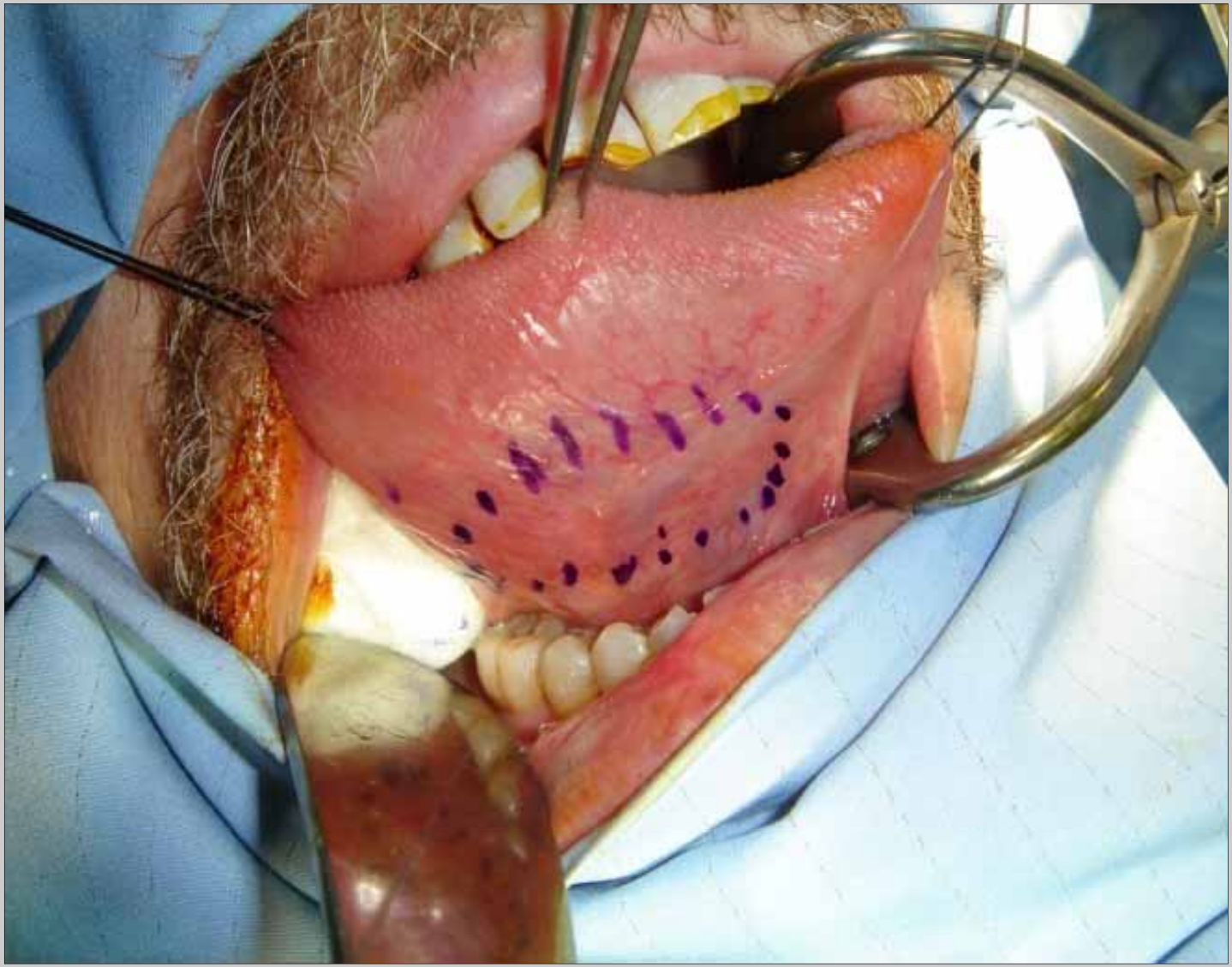

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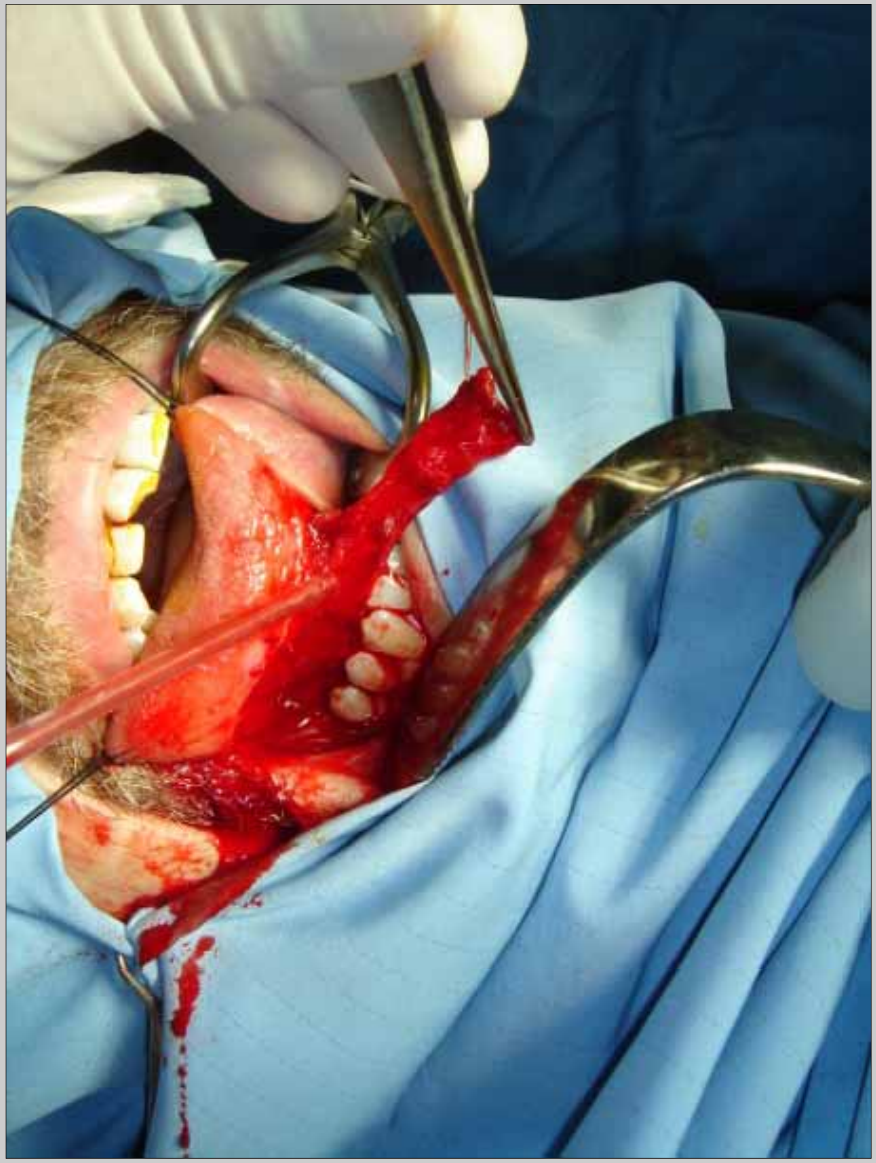

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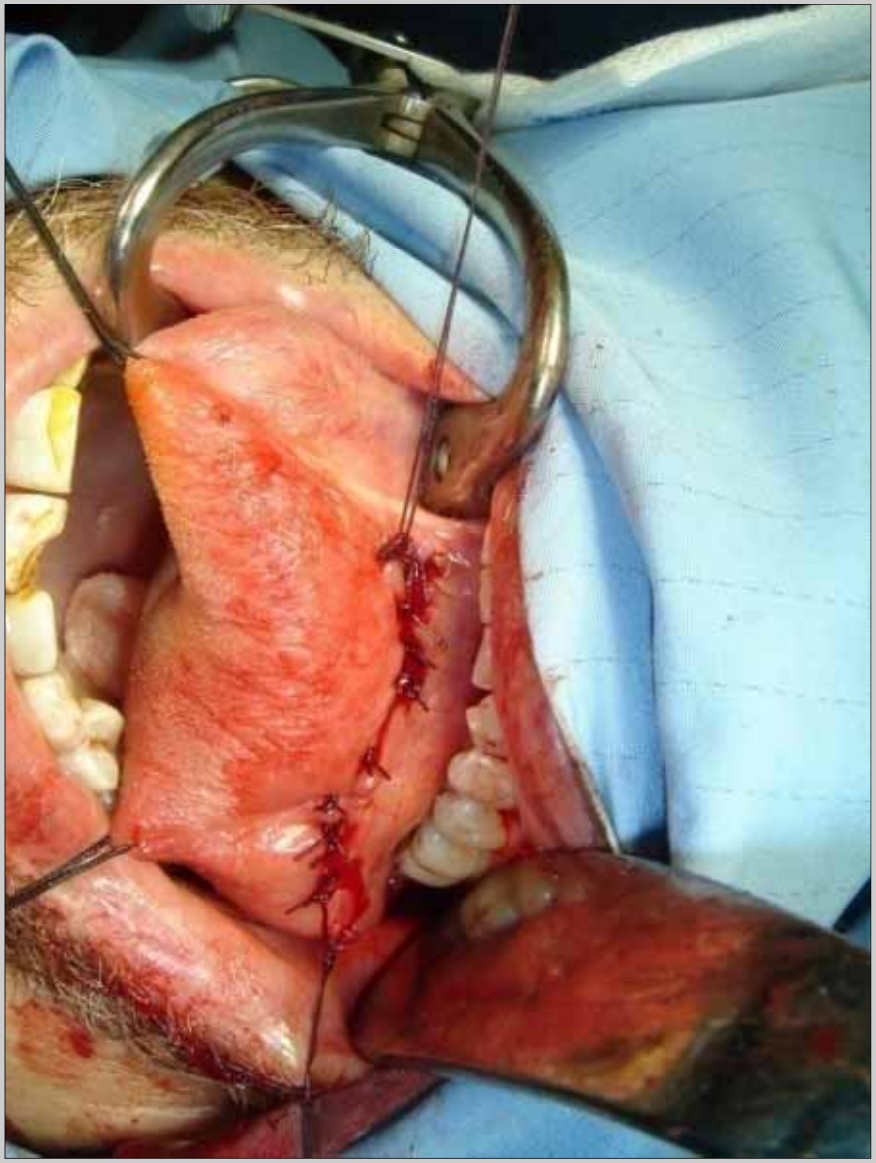

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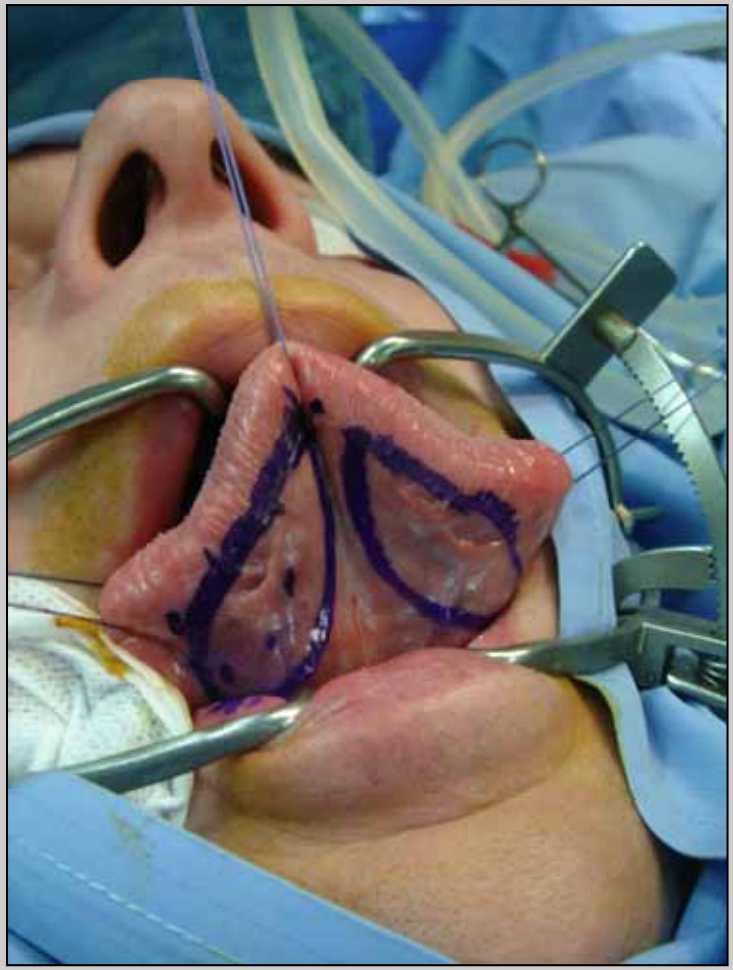
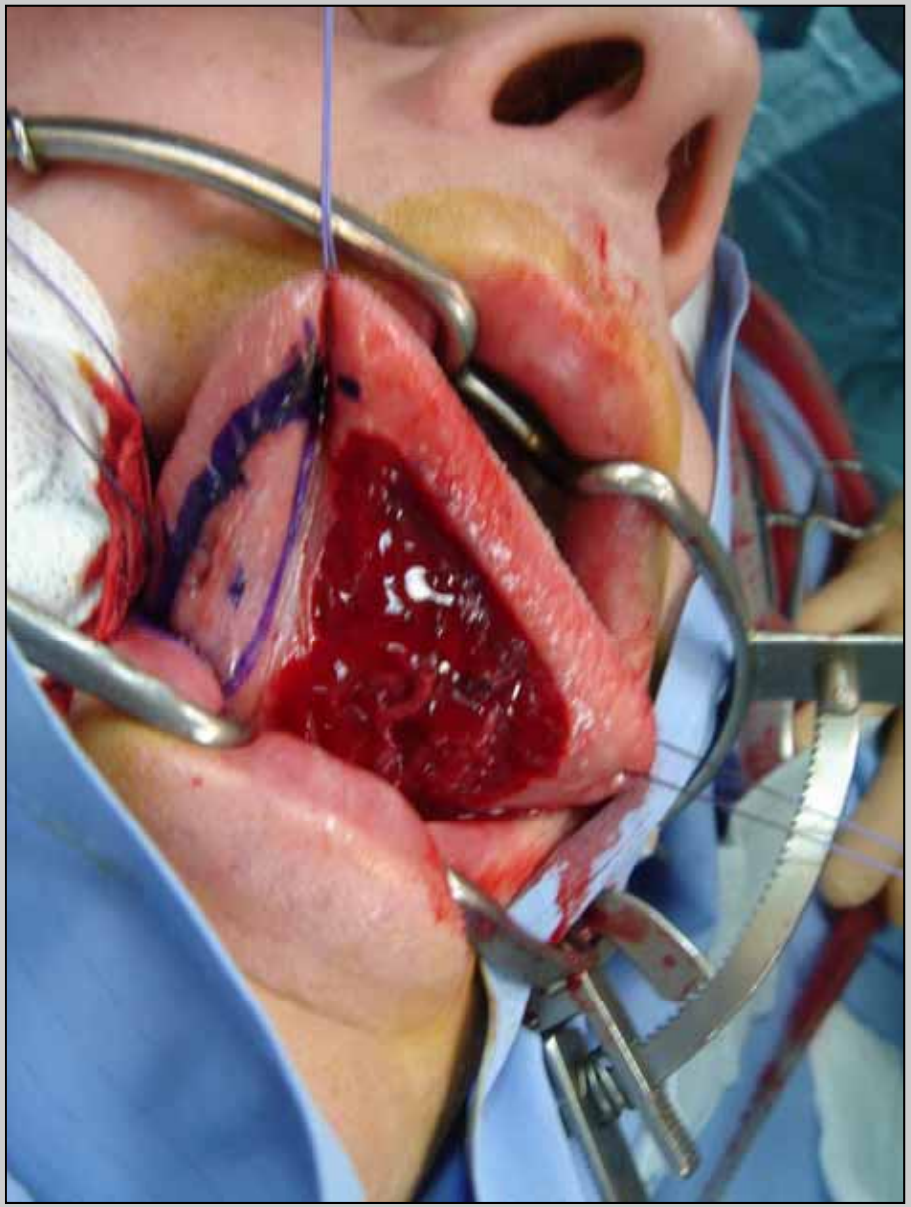


Double graft harvesting



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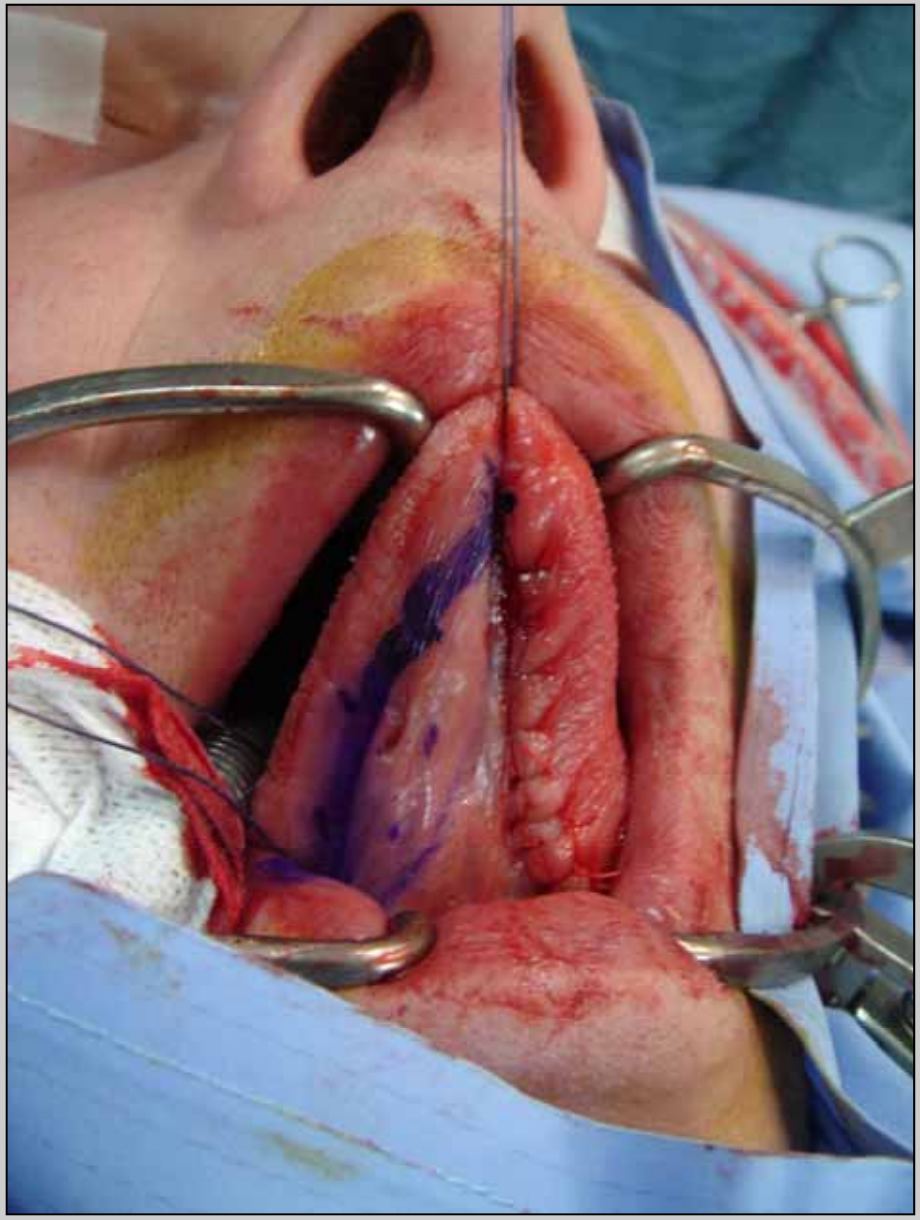

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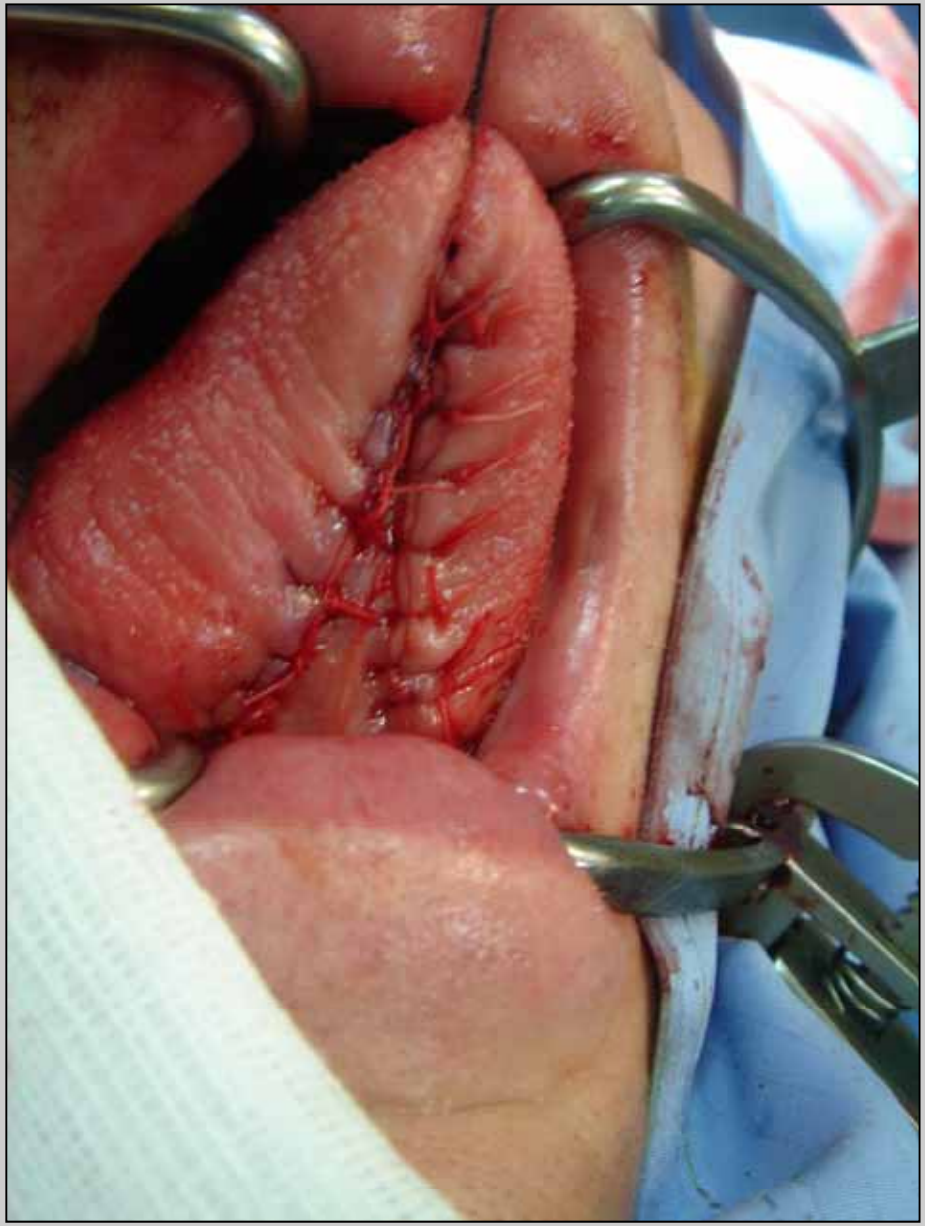

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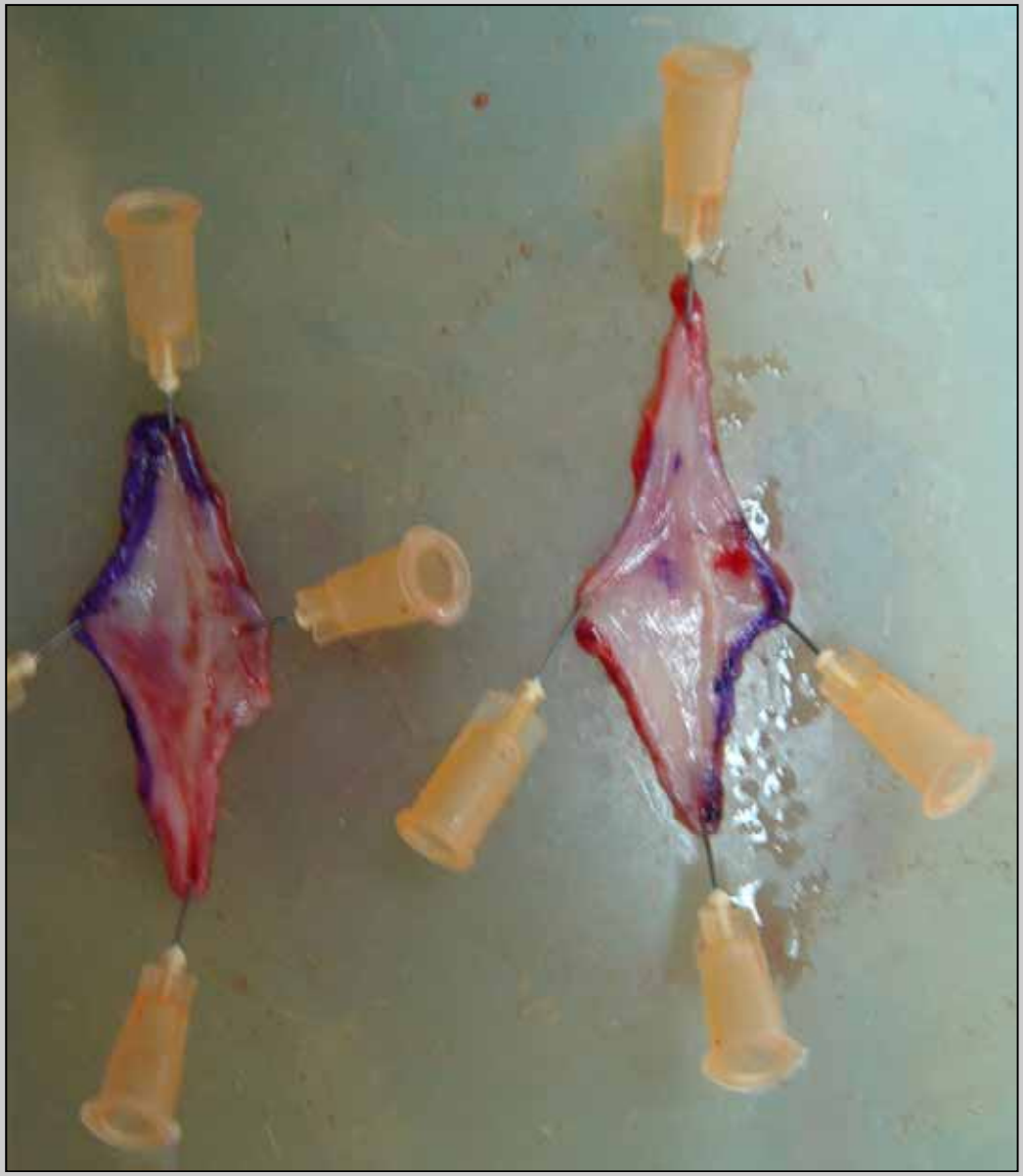

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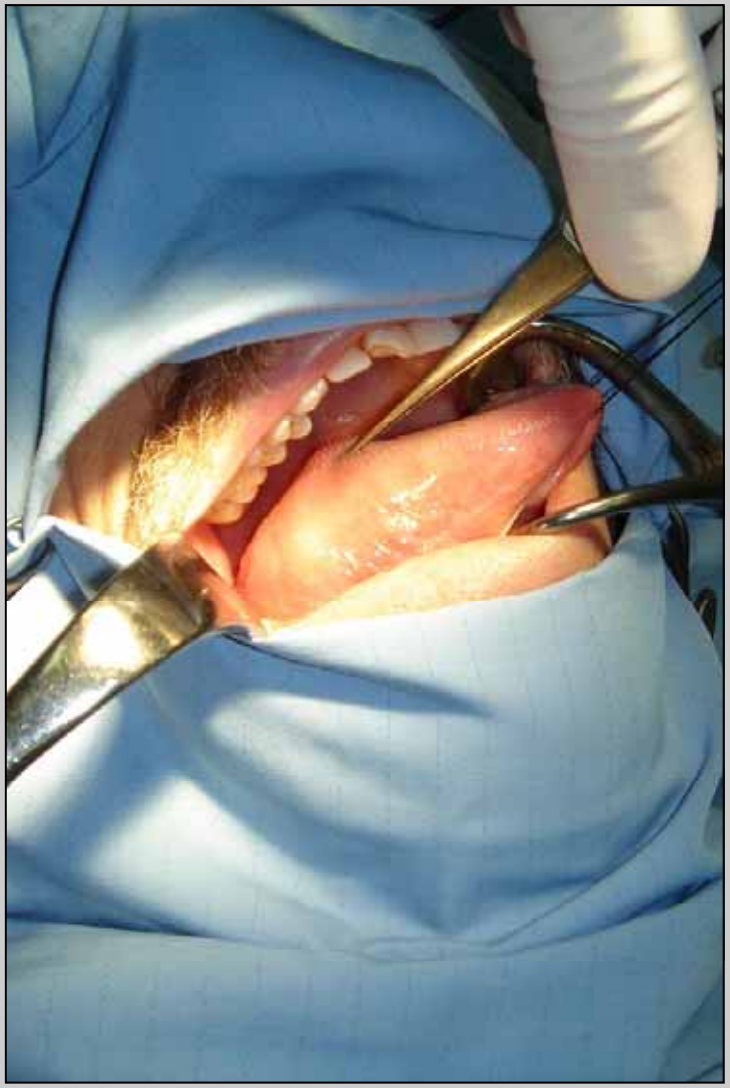


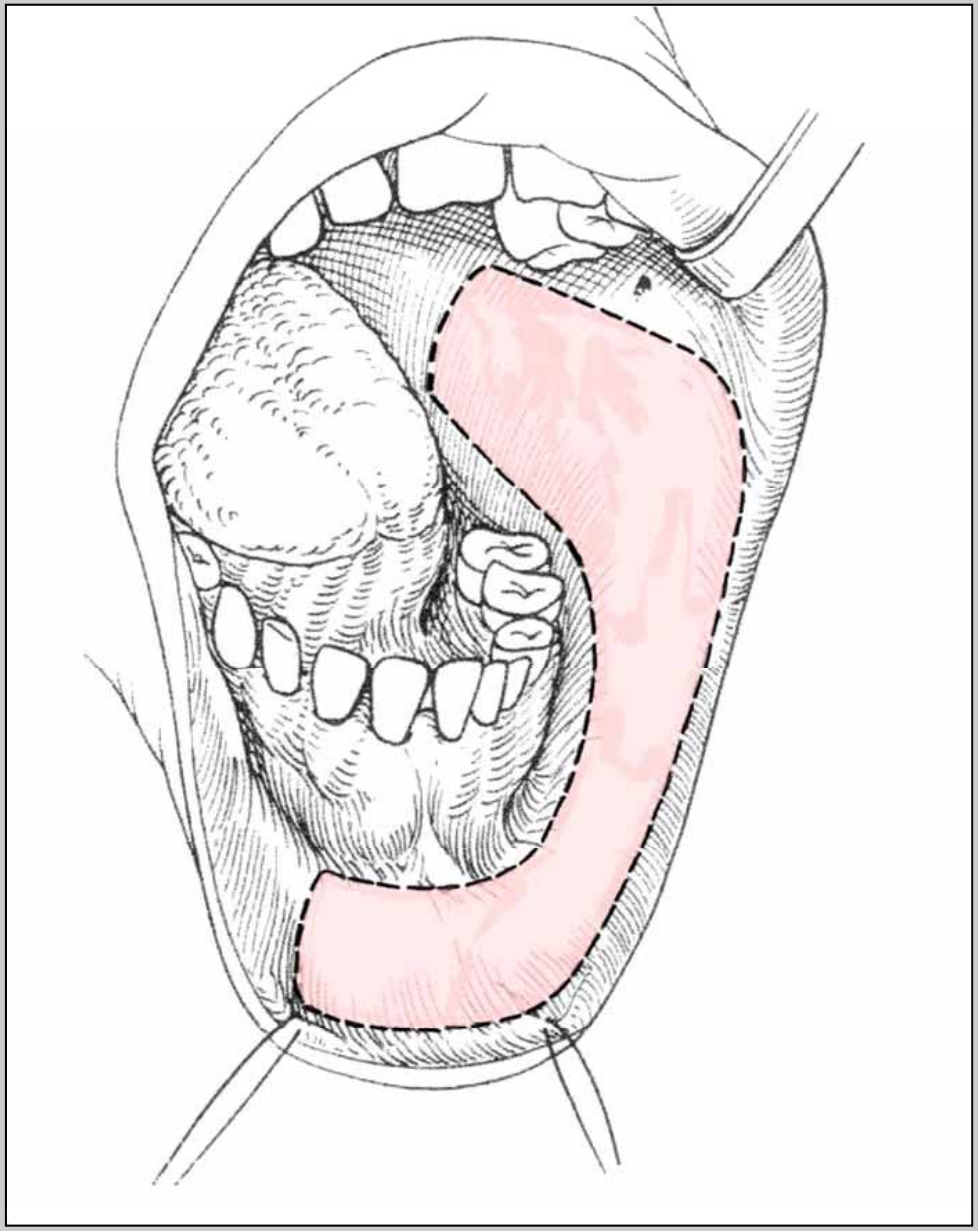
- **The tongue represents the best alternative to the cheek.**

- **Few reports in the literature.**

In the literature, some articles from developing countries suggest the use of aggressive surgical techniques to harvest long and wide grafts from the cheek and the tongue. These techniques are suggest because in these countries the incidence of long urethral strictures requiring long grafts is higher than in developed countries.

These techniques should be carefully evaluated for two reasons:

- **The potential disastrous aesthetic consequences of these harvesting techniques**
- **The authors reporting about these techniques are unable to provide a sure and adequate follow-up**



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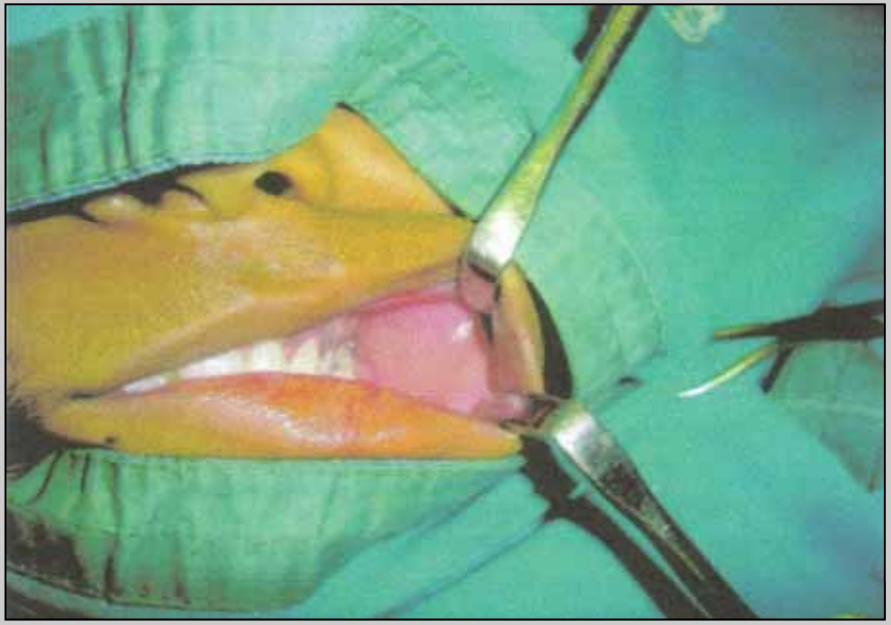
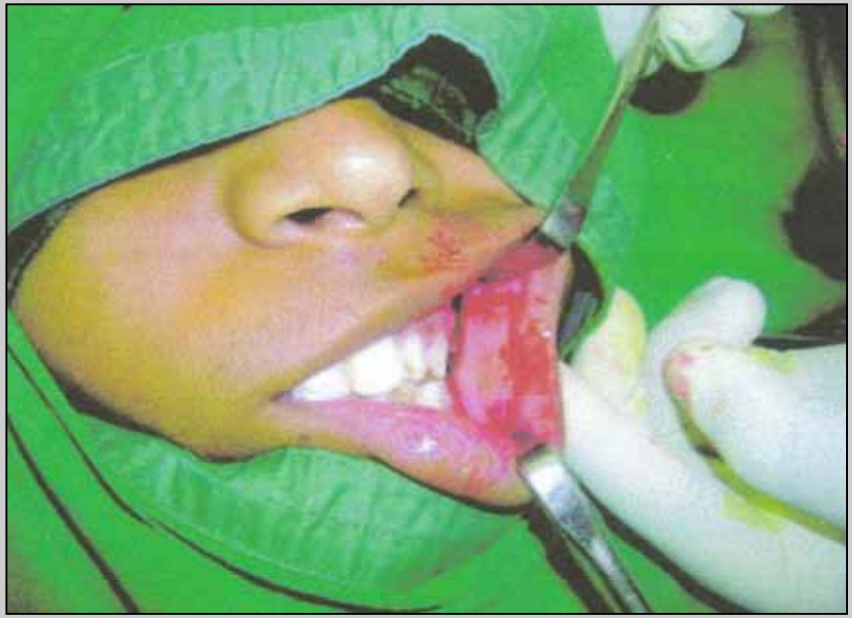
Surgeon's Workshop

Harvesting Buccal Mucosa Graft Under Local Infiltration Analgesia—Mitigating Need for General Anesthesia





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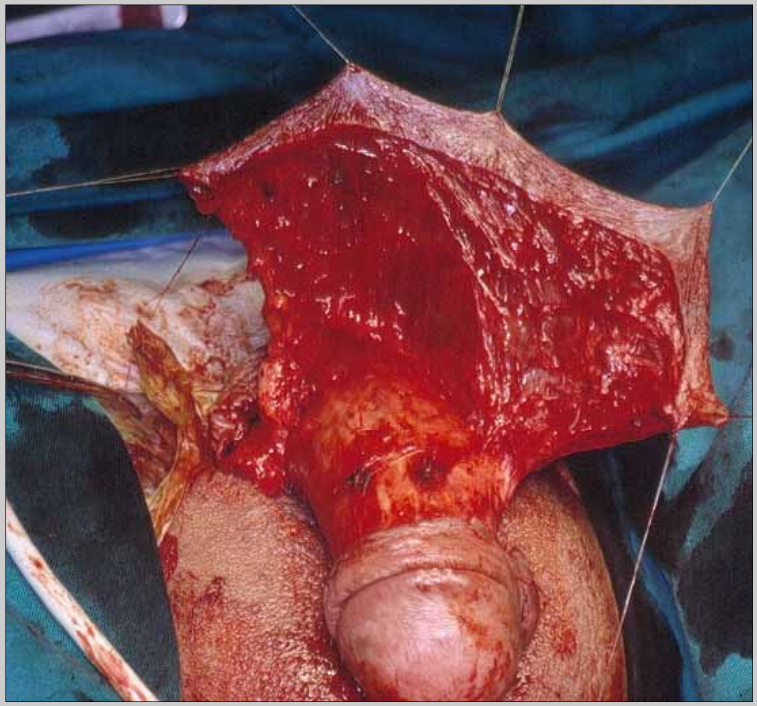
Complications of penile urethroplasty

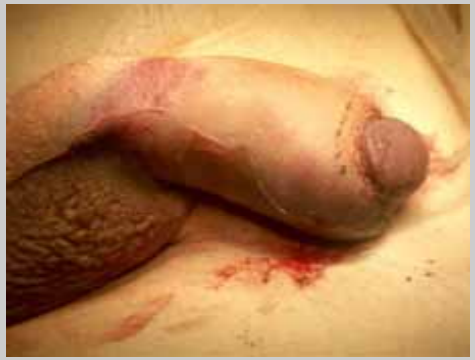
Urinary function

Sexual function

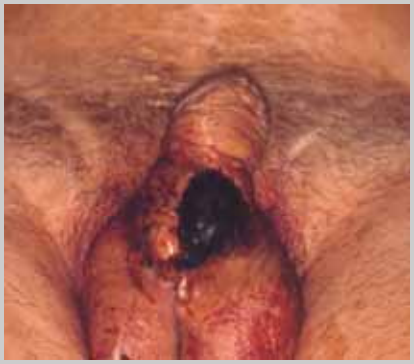
Aesthetic appearance of genitalia



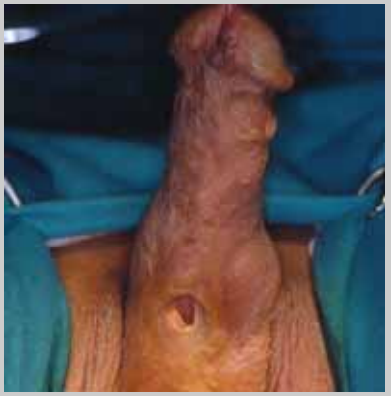
Complications following flap urethroplasty



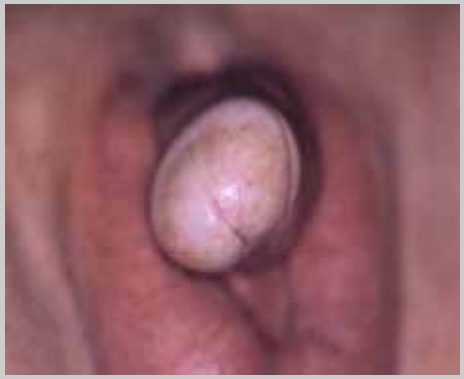
penile hematoma



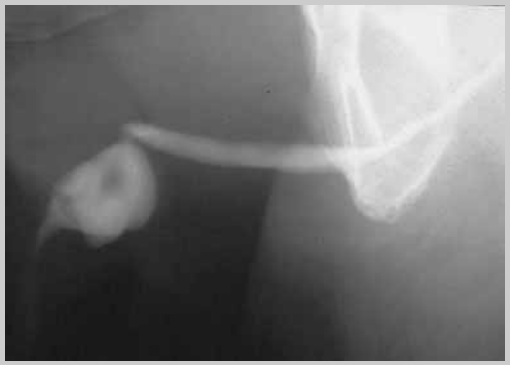
skin necrosis



fistula



penile-glans torsion



sacculation

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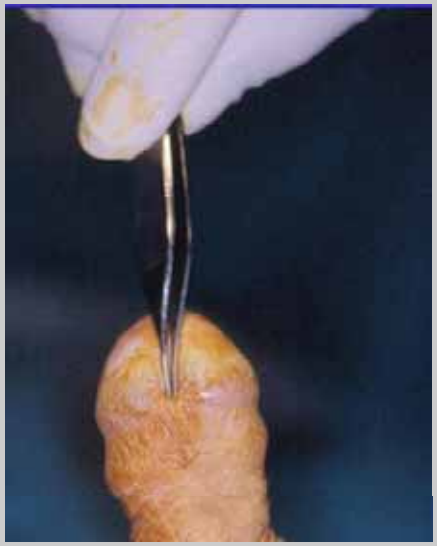
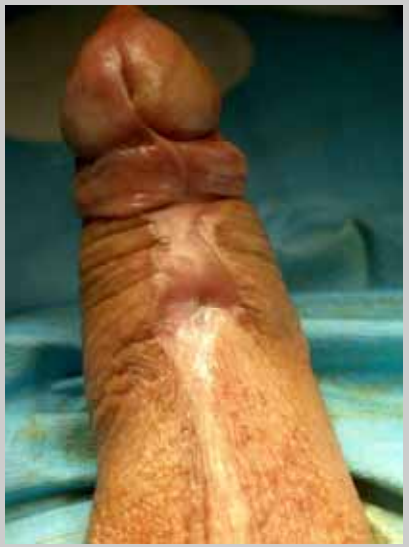
Complications following graft urethroplasty



meatal stenosis



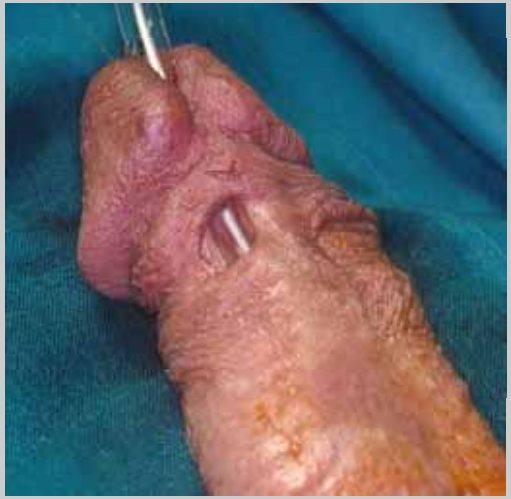
fistula

Complications following the first stage of urethroplasty

10-39% of patients showed contracture or scarring of the initial graft, requiring new grafting procedures

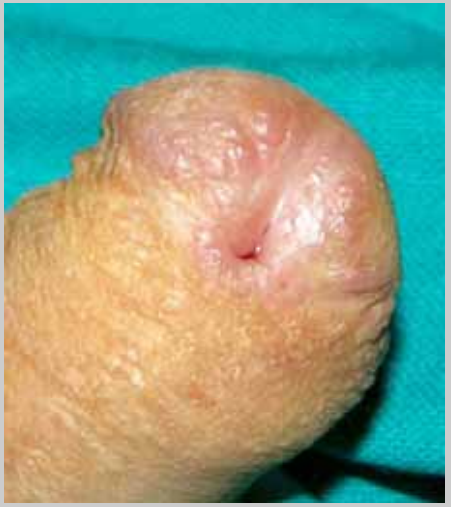
Barbagli G et al, Eur Urol 2006; 49:887-832

Complications following the second stage of urethroplasty



fistula

glans dehiscence



meatal stenosis

30% of patients showed complications following the second stage of urethroplasty, requiring surgical revision

Barbagli G et al, Eur Urol 2006; 49:887-832

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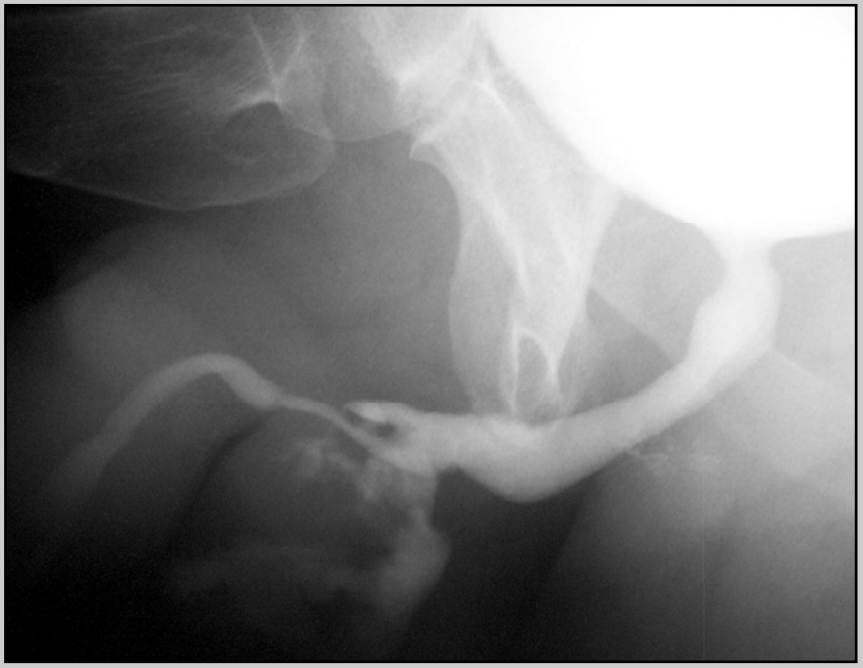
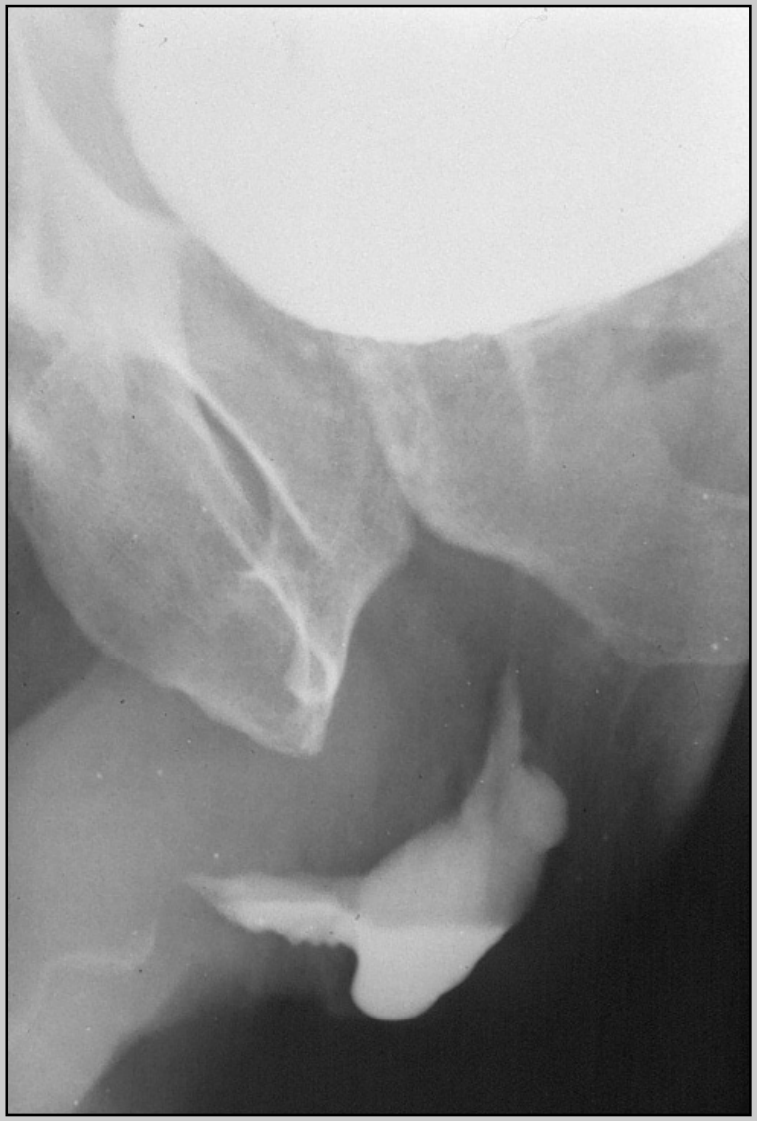
Complications of bulbar urethroplasty

Urinary function

Sexual function



fistula



sacculation

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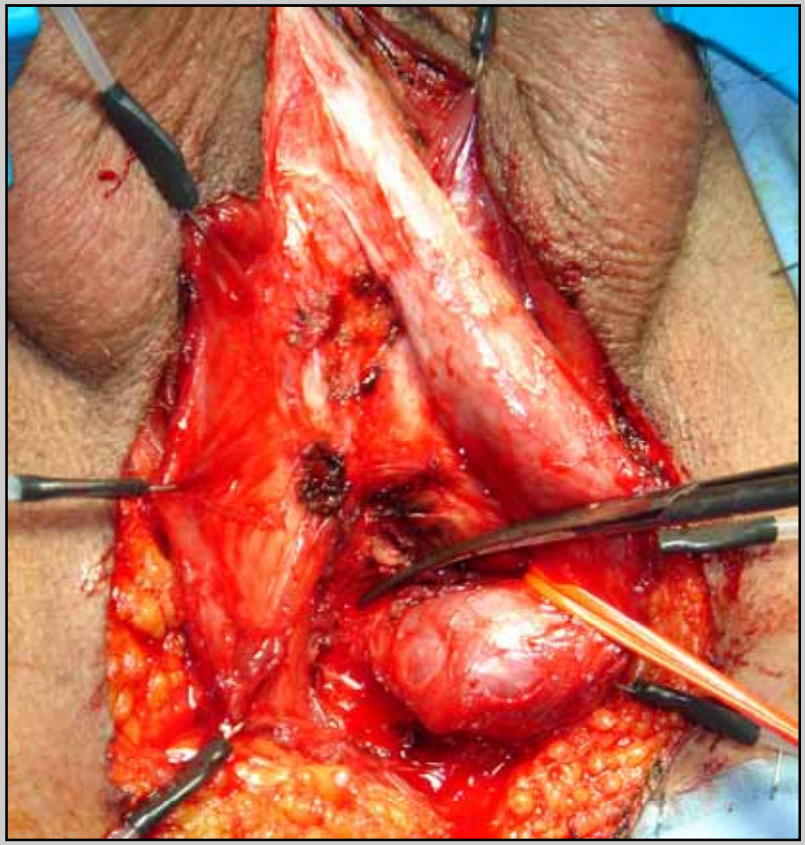
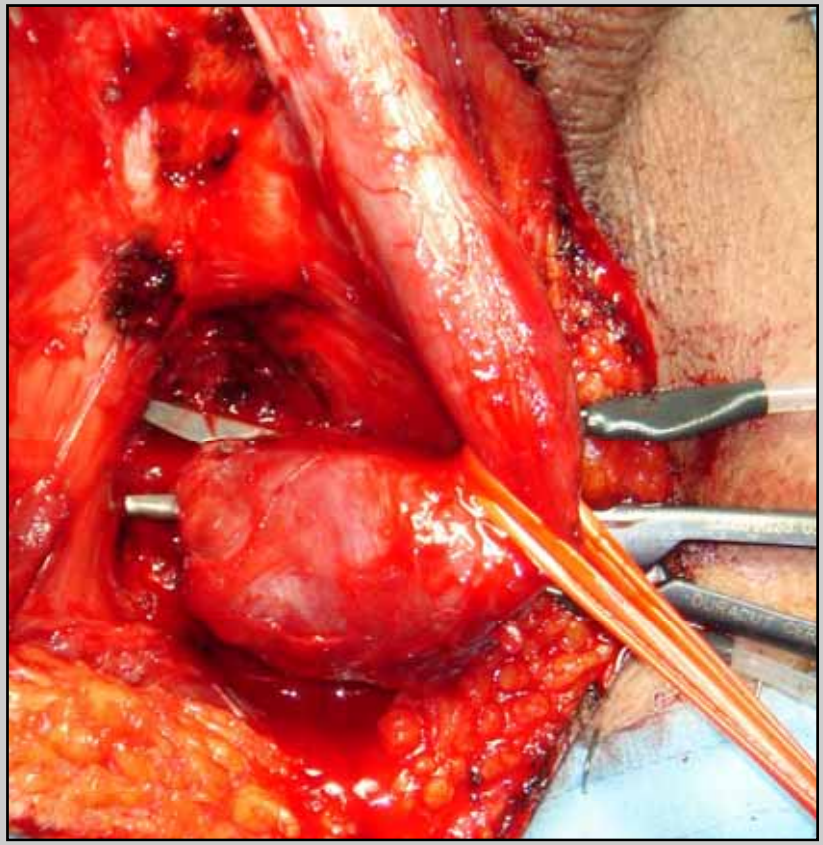
Complications of bulbar urethroplasty





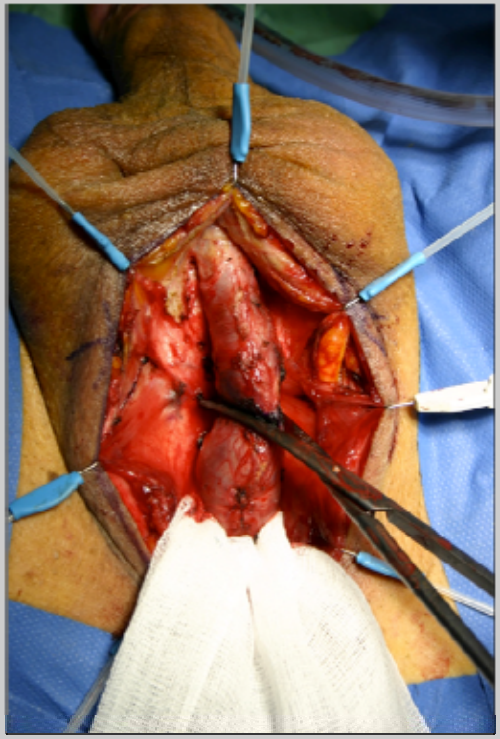
Impotence ?

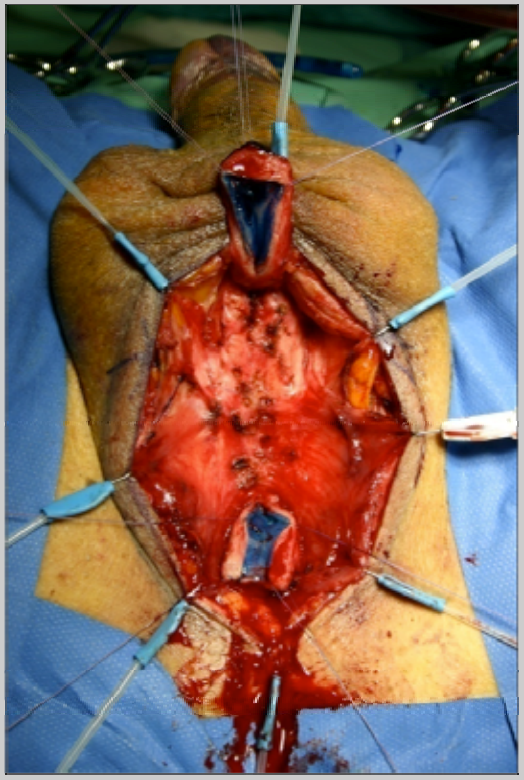
A total of 52 patients who underwent penile (17) or bulbar (35) urethroplasty were investigated.

Postoperative erectile dysfunction was noted in 20 (38%) men, of whom 18 recovered fully at a mean postoperative period of 190 days (range 92 to 398).

J Urol 2010, 183: 657-661

All patients who underwent bulbar urethroplasty were treated using end-to-end or augmented anastomotic repair.





J Urol 2010, 183: 657-661

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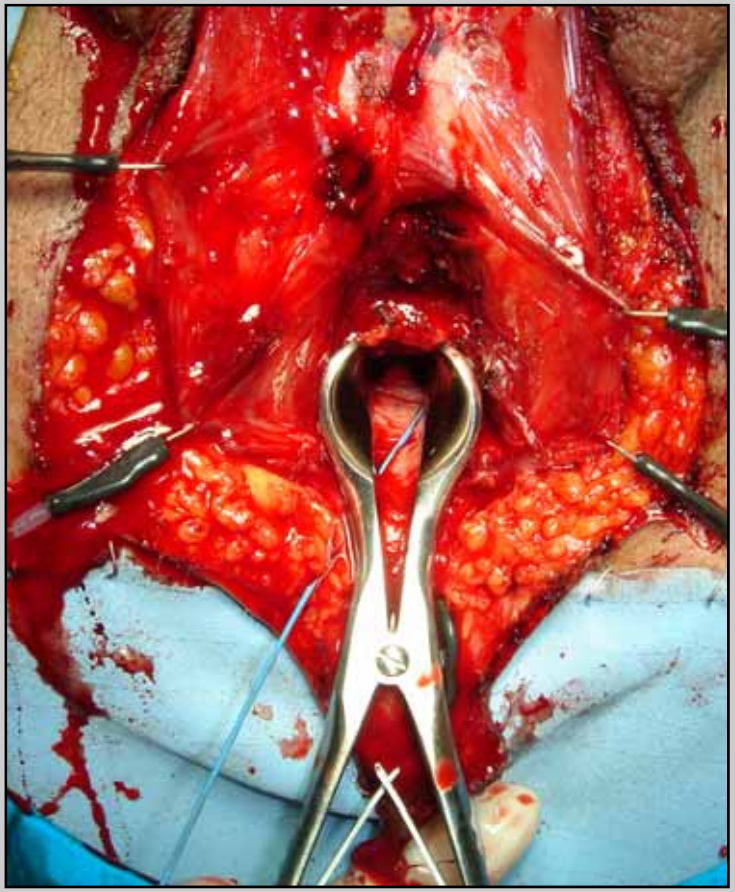
A total of 25 patients who undergoing 4 variations of bulbar urethroplasty were investigated.

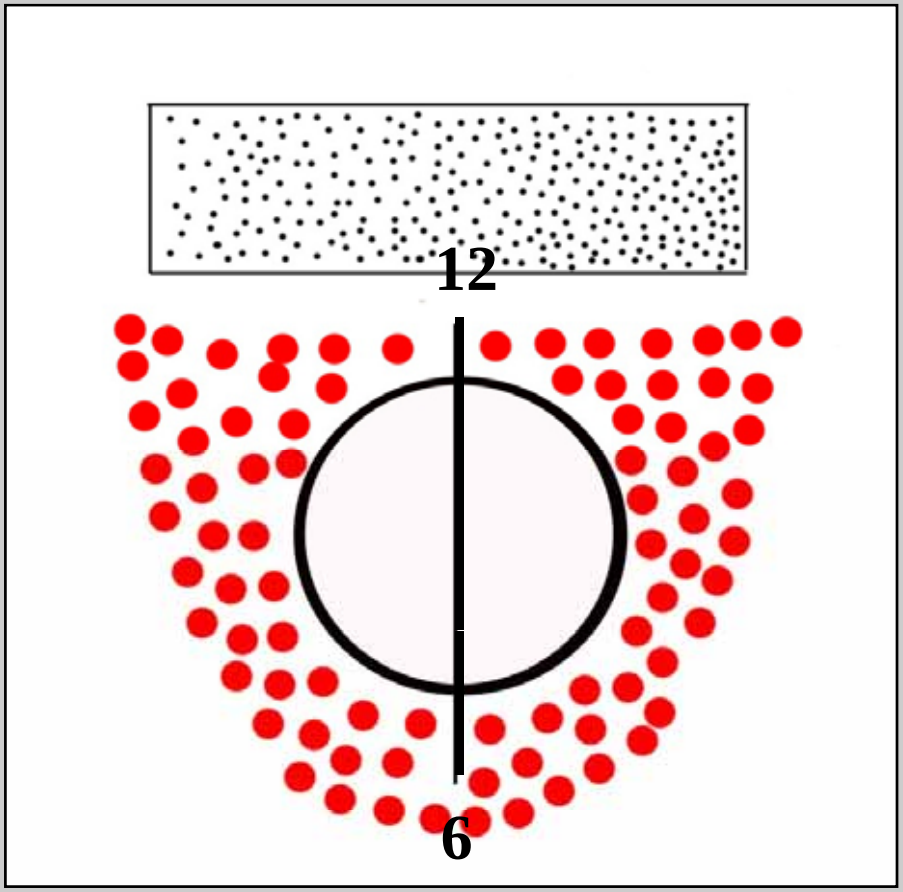
Bulbar urethroplasty had an insignificant effect on erectile function.

Surgical complexity with long stricture excision and the use of a buccal graft did not influence outcome.

J Urol 2007, 178: 1009-1011

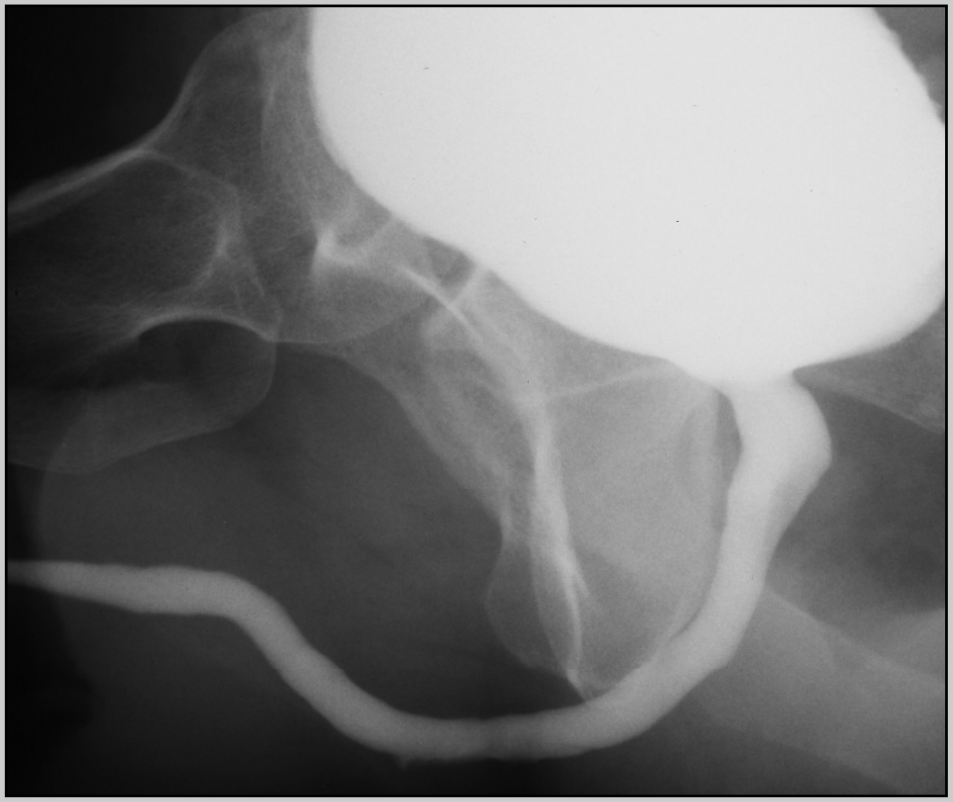
Complications of bulbar urethroplasty





Impotence ?

End-to-end anastomosis
Substitution urethroplasty



post-voiding dribbling

loss of ejaculation

semen sequestration in the urethral bulb

Why ?

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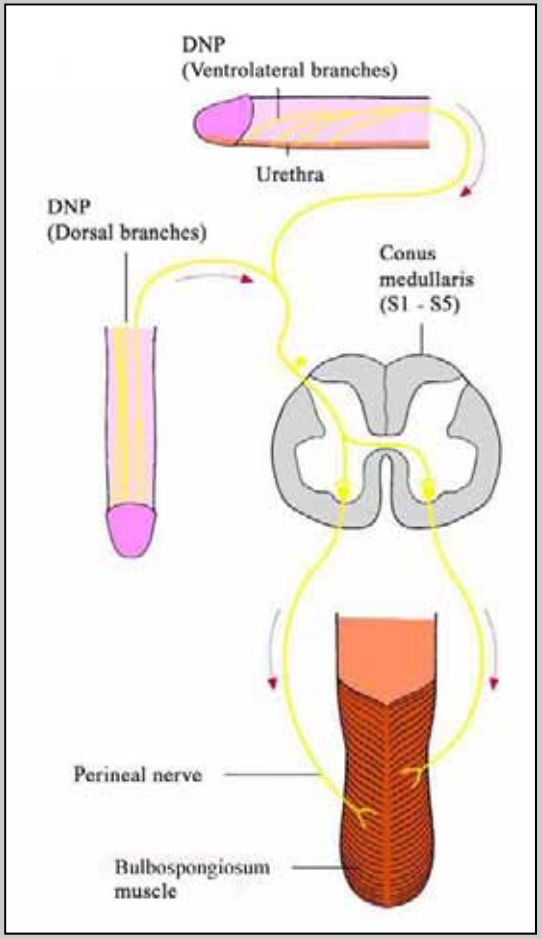
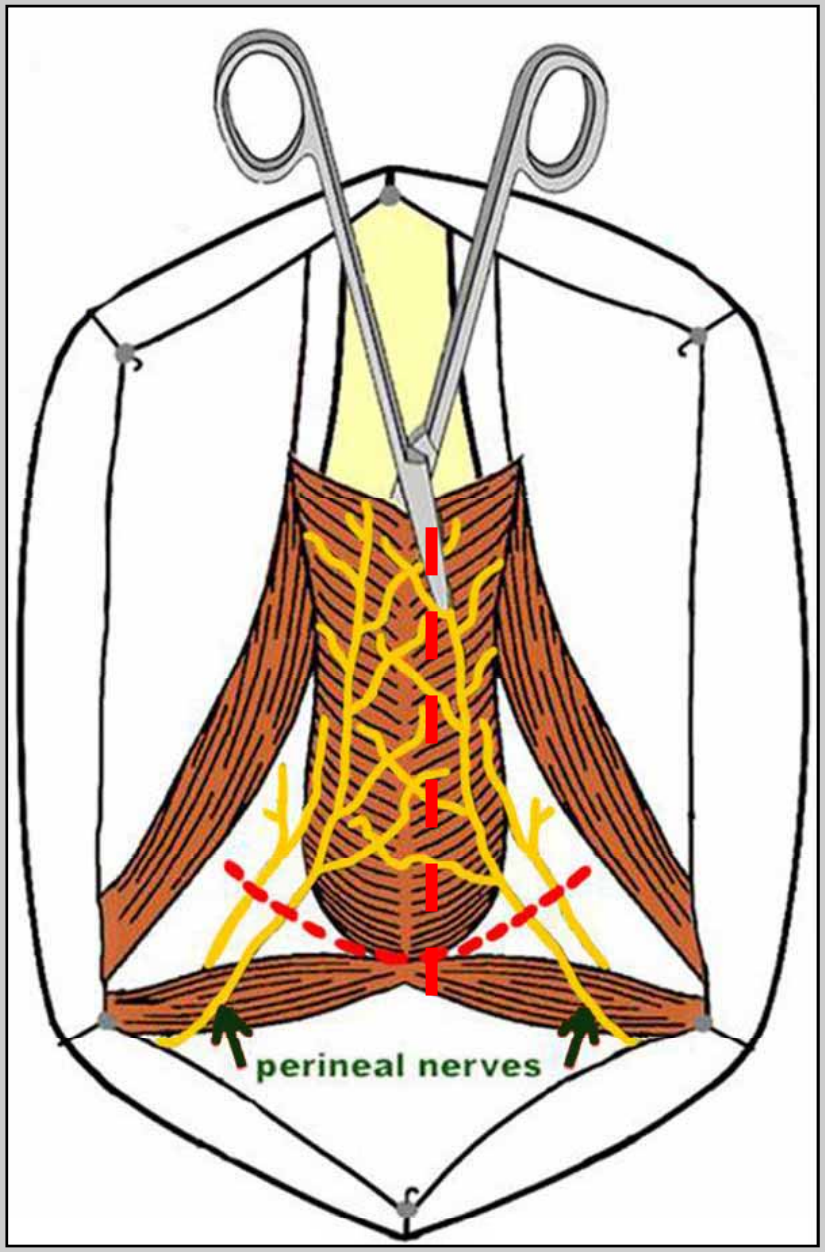
Functional anatomy of the bulbospongiosum muscle



- **Bulbospongiosum muscle contractions are elicited by stimulation of the dorsal nerve of the penis and following stimulation of the perineal nerve.**

- **Rhythmic contractions of the bulbospongiosum muscle expel semen and urine from the urethra, thus avoiding semen and urine sequestration in the urethral bulb.**

Yang CC and Bradley WE, BJU Int 2000; 85:857-863



During bulbar urethroplasty, damage to the bulbo-spongiosum muscle and to the perineal nerves may play a role in determining loss of efficient urethral contraction, causing difficulties in expelling semen and urine, and temporary or permanent sexual dysfunction.

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In the era of robotic surgery, it is also time to change urethral surgery!

- **Increase the use of minimally invasive techniques in urethroplasty, reducing the incidence of complications and improving patient quality of life.**

- **Increase the use of appropriate questionnaires to better evaluate the outcome of urethroplasty.**

Center for Reconstructive Urethral Surgery
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Evaluation of the results

objective

subjective

If you don’t look for complications following surgery,

you won’t find complications !

URETHRAL SURGERY QUESTIONNAIRE

BASELINE

This document will be used to help the NHS find out how well treatments improve patient's lives.

PART 1 – For completion by NHS Staff

Centre Number: ☐☐☐☐

Surgeon Number: ☐☐☐☐

Serial I/D: ☐☐☐☐☐☐☐☐☐☐

Patient's Hospital Number: ☐☐☐☐☐☐☐☐☐☐

Patient's NHS Number: ☐☐☐☐☐☐☐☐☐☐

Date PROM sent to patient: ☐☐☐☐☐☐☐☐

URETHRAL SURGERY QUESTIONNAIRE

POST-OPERATIVE

This document will be used to help the NHS find out how well treatments improve patient's lives.

PART 1 – For completion by NHS Staff

Centre Number: ☐☐☐☐

Surgeon Number: ☐☐☐☐

Serial I/D: ☐☐☐☐☐☐☐☐☐☐

Patient's Hospital Number: ☐☐☐☐☐☐☐☐☐☐

Patient's NHS Number: ☐☐☐☐☐☐☐☐☐☐

Date of Uethral Surgery: ☐☐☐☐☐☐☐☐

Operation Code: ☐☐☐☐☐☐☐☐☐☐

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

Thank you !