

SHORT COMMUNICATION

Diagnostic-therapeutic pathway for small lesions of the testis

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Summary *Objective of our study was to define a diagnostic-therapeutic pathway for proper treatment of not-palpable testicular masses, that may be benign in 38% of cases. Since the intraoperative diagnosis is difficult to reach in particular in small lesion (< 8 mm) and the risk of tissue loss in frozen section analysis occurs frequently, we propose a diagnostic flow chart for the best management of small testis lesions. This proposed protocol has to be shown in details to physicians and patients, who must understand the clinical implications and the risk to undergo a second radical surgery.*

KEY WORDS: Small masses; Testis neoplasms; Partial orchiectomy; Ultrasound; Pathology.

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INTRODUCTION

Incidentally discovered small testicular lesions are increasing since ultrasound use increased in particular for infertility work up.

Although small lesion of the testis are benign in 38% of cases (1, 2), there is no agreement on criteria for testis-sparing surgery.

Guidelines give indication for testis-sparing surgery only in selected cases (bilateral testicular tumor or monorchid patient) (3).

However, testis-sparing surgery has been performed also in patients with contralateral normal testis with a good oncological outcome (2, 4-8). Several concerns on conservative approach are debated: intraoperative diagnosis is not always reliable in relation to the small size of the lesion and also difficulties in pathological diagnosis related to the missing immunohistochemistry during intraoperative analysis.

The aim of this study is to establish a diagnostic-therapeutic pathway that allows to perform an effective testis-sparing surgery for impalpable testicular masses.

CLINICAL PROTOCOL TO NOT-PALPABLE TESTIS LESIONS

We present a diagnostic-therapeutic protocol for patients affected by not-palpable testicular masses, with maximum diameter lower than 15 mm and negative testicular markers. This approach follows our clinical practice.

Ultrasound

All men underwent scrotal ultrasound in our hospital to confirm type, dimension and localization of the lesion. Ultrasound characteristics of the lesion were then verified at the confirmatory ultrasound by expert operator and last generation of ultrasound machine. If the lesion was not confirmed by confirmatory ultrasound or it is extra-testicular lesion, the patient was proposed for ultrasound follow-up.

Once the small testicular mass was confirmed at our hospital, the therapeutic indication for all cases was testicular exploration with inguinal access. This technique can be associated to intraoperative ultrasound, equipped with linear probe, in order to obtain the relative certainty of the size of the nodule and negative surgical margins, which of course will be subsequently verified by the pathologist. In figures, we report ultrasound images of three cases of our who underwent surgery for epidermoid cyst (Figure 2), Leydig tumor (Figure 3), and seminoma (Figure 4).

Surgery

Surgical exploration, using intraoperative ultrasound was done without clamping the spermatic cord. The surgical technique involved the removal of the neoplastic nodule and 3 additional biopsies of the surrounding parenchyma (two distant and one next to the mass) sent for definitive histology.

Smaller masses (< 8 mm) were usually sent for definitive histology, while larger masses (8-15 mm) were sent to the pathologist for intraoperative frozen sections. Pathologist confirmed size and completeness of surgical margins, by macroscopic view. If the nodule was large enough to be cut for frozen section, then a microscopic description of malignant pattern was reported.

Figure 1.
Flow chart of diagnostic-therapeutic protocol for the management of non-palpable testicular masses.

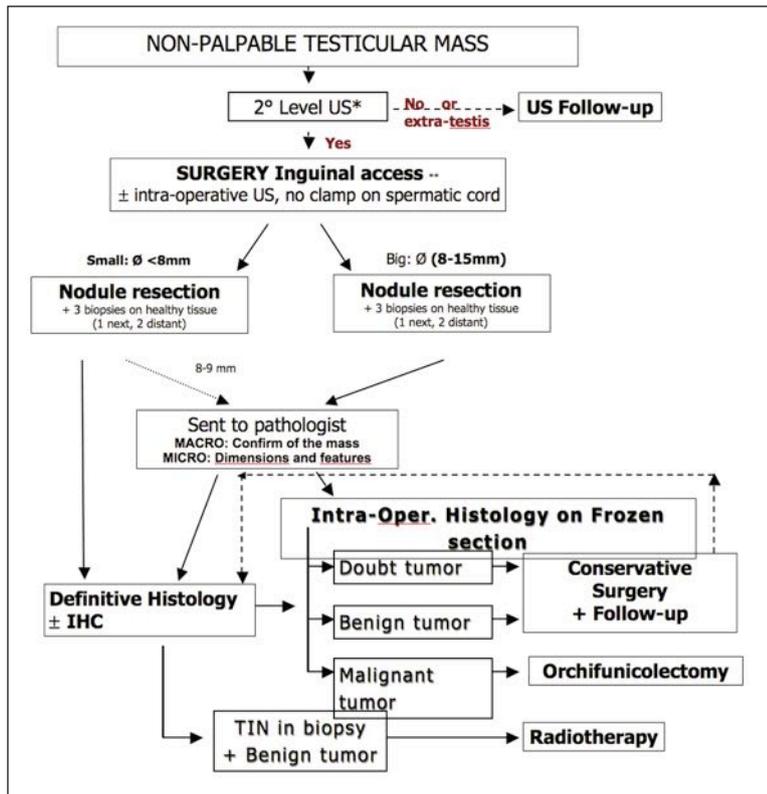


Figure 2.
Testis ultrasound: hyper-echoic lesion, not palpable, inside the testis. After surgical partial orchiectomy, a dermoid cyst was described.

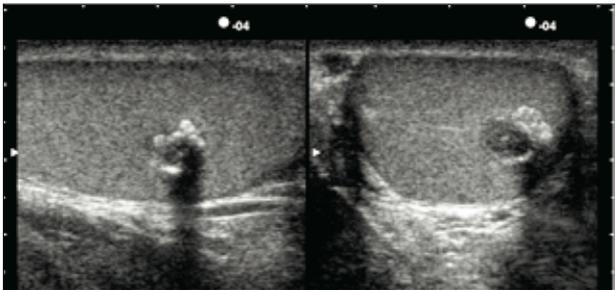
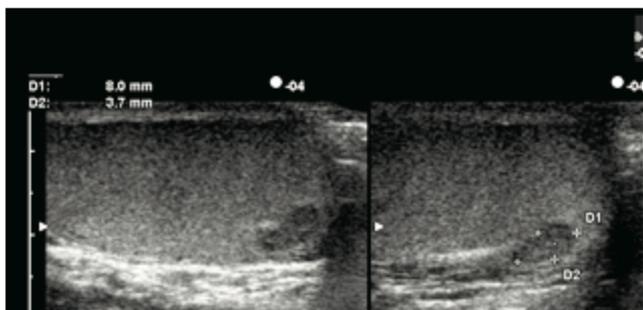


Figure 3
Testis ultrasound: small non palpable hypo-echoic lesion inside the testis. A Leydig tumor was identified after partial resection and definitive histology.



Figure 4
Testis ultrasound: small non palpable hypo-echoic lesion close to the epididymis. A seminoma was identified after partial resection and definitive histology.



Masses of mean size (8-9 mm) were sent to the pathologist, who evaluated whether to perform the frozen section or to move directly to the definitive exam, in order to reduce the risk of losing tissue for definitive histology and immunoistochemistry. If feasible, the intraoperative frozen section histology gives real time information about macroscopic (localization, surgical margins, size of the lesion) and microscopic features. Such information can guide the surgical management.

In case of benign or doubtful lesion there was the indication to keep on conservative management.

In case of malignancy at the frozen section, inguinal orchiectomy was performed.

All removed testicular lesion are subjected to definitive histological examination, including immunohistochemistry of the surgical specimen, that allowed to have a definitive histologic diagnosis. Definitive paraffin-embedded tissue analysis is the main diagnostic tool for testicular cancer.

If definitive histology confirmed that the mass was benign, the patient was submitted to periodic ultrasound follow up. In case of definitive malignancy inguinal orchiectomy was done.

The presence of isolated *intraepithelial neoplasia* (TIN) in one or more of the biopsies of the surrounding parenchyma, posed indication to radiotherapy.

Before undergoing this protocol, the patient has to be informed in detail about the various benefits, risks and implications: first of all the possibility of being subjected to a second surgery as soon as the urologist is in possession of the definitive histological result.

Our protocol has been approved by different specialists involved in the diagnosis and treatment (urologist, pathologist, radiologist and oncologist) and used in different Departments of Urology.

Figure 1 shows the flow chart of the protocol for diagnosis, treatment and therapy of small not-palpable testicular masses.

The histological diagnosis on frozen sections is difficult in small testicular masses and raises the risk of loss of tissue useful for the final histology and ancillary immunohistochemistry.

Intraoperative ultrasound allows the surgeon to orient with more confidence in the surgical practice and then to decide whether to send the specimen for intraoperative histological examination or for definitive examination.

In the masses of border-line size a key role in this decision is covered by the pathologist, who must be able to evaluate the tumor volume and then to act in a way to have an definitive histologic diagnosis as accurate as possible.

CONCLUSIONS

Frequency of benign tumors is higher in small testicular masses. Intraoperative diagnosis of non-palpable testicular lesions with frozen sections is difficult in particular for very small lesions (< 8 mm) also for the risk of loss of tissue for definitive histology and ancillary immunohistochemistry.

For these reasons, our protocol allows the surgeon to perform testis-sparing surgery in selected cases, reaching an oncologic out-come similar to standard surgery.

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