



# Testis-Sparing Surgery in Small Testicular Masses Not Suspected to Be Malignant

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## Abstract

**Fifteen patients with small testicular masses not suspected to be malignant were included in the study, and permanent and frozen section analyses were evaluated. As a result frozen analysis, preoperative externalization of the suspected malignancy with a physical examination, ultrasonographic evaluation, and serum tumor marker analysis were concluded as key points for accurate decision making between TSS and radical orchiectomy.**

**Background:** We aimed to determine the safety, efficacy, and the concordance of permanent and frozen section analysis (FSA) of testis-sparing surgery (TSS) in patients who had small testicular masses that were not suspected to be malignant. **Patients and Methods:** Fifteen patients who underwent TSS were included in the study. TSS was performed for the patients who had testicular lesions <25 mm and testicular lesion volume <30% of the whole testis. All patients had normal serum tumor marker levels and ultrasonographic evaluation did not indicate malignancy. Surgery was performed via an inguinal approach with temporary cord occlusion and FSA of the lesions. Benign findings allowed for TSS, and cancer prompted total orchiectomy. **Results:** The mean patient age was 25.33 (range, 20-36) years. The predominant complaint was swelling (9 patients). The mean lesion diameter was 16 mm (range, 5-26 mm). Fourteen of all cases (93%) had benign pathology and underwent TSS. Only 1 patient, whose FSA revealed malignant formation, underwent radical orchiectomy. Final pathology of this patient was seminoma. Complete histopathologic concordance was observed between the results of frozen and permanent sections. TSS was performed with no intra- or postoperative complications. After a mean follow-up of 23 months (range, 6-44 months) all patients, except 3 who were lost to follow-up, were free of disease. **Conclusion:** The main key points for accurate decision-making between TSS and radical orchiectomy are intraoperative FSA and preoperative externalization of possible suspected malignancy with physical examination, ultrasonographic evaluation, and serum tumor marker analysis.

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## Introduction

Radical orchiectomy has been the standard treatment approach for malignant testicular masses for several decades.<sup>1</sup> It has the advantage of accurate diagnosis and adequate local tumor control, but the disadvantage of an organ loss in case of benign diseases. Actually there is no debate for this group of patients but the widespread use of imaging techniques, especially ultrasonography (US), has led to an increasing number of incidentally detected small testicular lesions, which have

been shown mostly to be benign.<sup>2</sup> Recent advances in oncologic outcomes also raised the question as to whether radical orchiectomy is necessary especially in this special patient group who have inadequate preoperative findings of malignant disease.<sup>3</sup> Considering this information and several published reports, testis-sparing surgery (TSS) is now a well known and progressively accepted surgical technique for small testicular lesions and those not suspected to be malignant<sup>4-6</sup> and for testicular masses in solitary testis and bilateral testicular masses even if they are thought to be malignant.<sup>3</sup>

In this study we evaluated the safety, efficacy, and the concordance of permanent and frozen section analysis (FSA) of TSS in a subgroup of patients who had small testicular masses (STMs) that have little or no malignancy suspicion.

## Patients and Methods

This retrospective study was conducted in two academic centers between June 2010 and October 2014. A total of 15 patients who

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## TSS in Lesions Not Suspected to Be Malignant

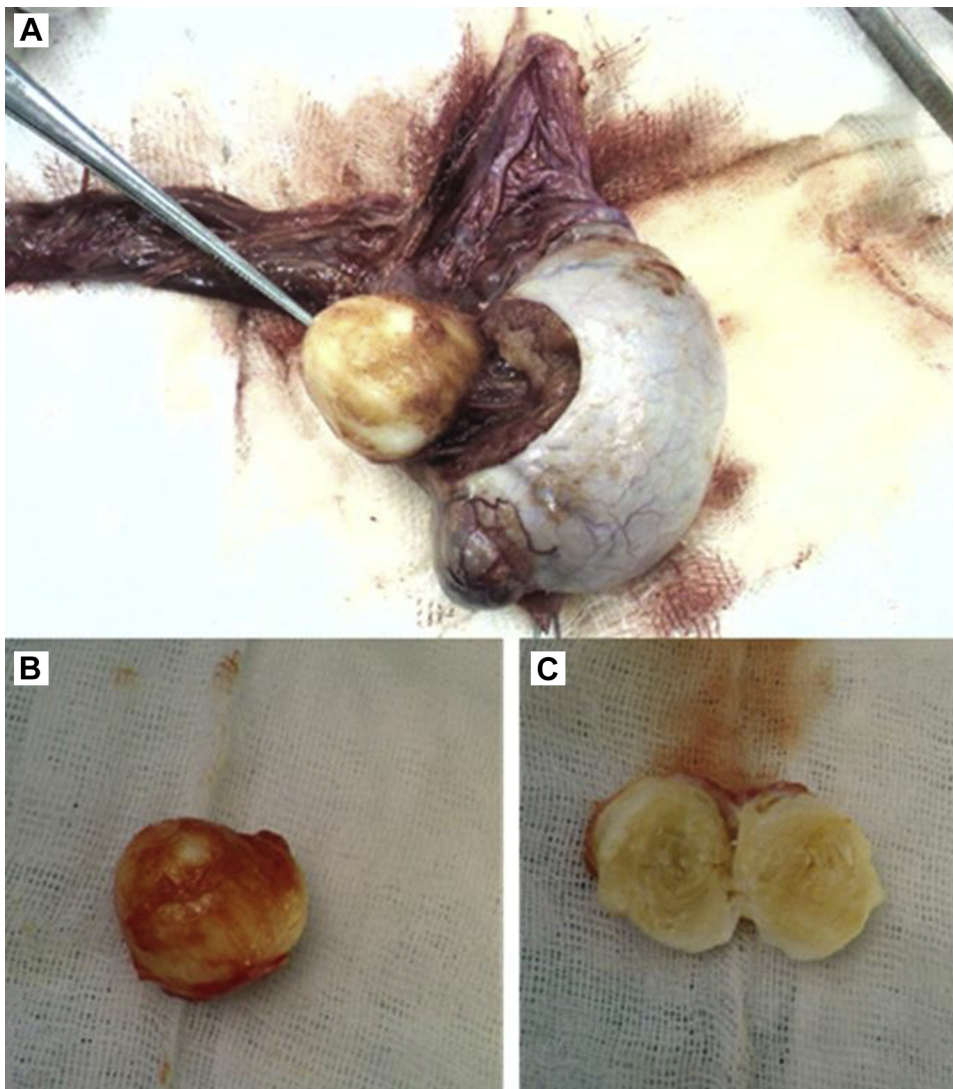
underwent TSS for STMs that were not suspected to be malignant were included to the study. We defined STMs as testicular lesions <25 mm and testicular lesion volume <30% of the whole testis. Preoperative serum tumor marker levels including  $\alpha$ -fetoprotein,  $\beta$  human chorionic gonadotropin, and lactate dehydrogenase were measured for all patients. Lesions with increased serum tumor marker levels were considered to be highly suggestive of malignancy and were excluded from the study. Preoperative US was also carried out in all patients to evaluate the lesion diameter, lesion volume, sonographic characteristics of the lesion, and the contralateral testis. Lesions with US findings highly suggestive of malignancy were also excluded from the study. One other exclusion criterion was evidence of metastasis.

All patients underwent testicular exploration using an inguinal approach with either general or spinal anesthesia. After exteriorization

of the testis through inguinal access, the lesion was identified either with palpation or with intraoperative US. The spermatic cord was clamped temporarily to occlude spermatic vessels, and immediately after the excision of the mass and the closure of the tunica albuginea, the clamp of the spermatic cord was removed. Half of the resected lesions were subjected to FSA and the remaining half reserved for permanent section (Figure 1). In the case of malignancy radical orchiectomy was performed. Conversely, benign FSA results led to conservation of the remaining healthy testis. In all patients frozen and permanent section results were compared.

For benign lesions, follow-up was performed with US and physical examination at the six-month visit. In the case of malignancy, 4 visits within the first 2 years of the disease was recommended.

**Figure 1** (A) Exteriorization and Identification of the Testis via Inguinal Access. (B) Excision of the Mass. (C) Two Halves of the Resected Lesion, 1 for Frozen and the Other for Permanent Section Analysis



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