

# Adrenal rests associated with ectopic testis in an adult: Clinical significance

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## Abstract

Ectopic adrenal tissue may be present along the path of the testis and discovered during groin surgery. The condition has been mainly reported in the pediatric population and very rarely in adults. Here, we report on the case of an adult male with undescended testis who received orchidectomy, and ectopic adrenal tissue was discovered in the removed specimen. The clinical significance of such a condition is discussed.

**Key Words:** Adrenal ectopia, orchidectomy, undescended testis

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## INTRODUCTION

Adrenal glandular tissue can be aberrantly located in many locations, including the inguinal region.<sup>[1]</sup> Ectopic adrenal tissue is rarely reported in adult population, and may pose a diagnostic challenge. The pathogenesis of such a rare entity is still not fully understood.<sup>[2]</sup> The ectopic adrenal tissue can potentially undergo hyperplasia and neoplasia;<sup>[3,4]</sup> therefore, surgical resection is advisable whenever incidentally found.

## CASE REPORT

A 26-year-old man, married with two children, presented with a swelling in the right groin, which was present since early childhood. His past history was irrelevant. On examination, he was generally well and his vital signs were normal as well as his chest and abdomen. Local examination revealed a reducible

inguinoscrotal hernia on the right side, and an undescended testis on the left, with underdeveloped hemiscrotum.

His routine laboratory investigations were unremarkable and computerized axial tomography (CT)/ultrasound (US) scans of the inguinal region showed normally located right testis with an inguinoscrotal hernia, while on the left side, the testis was lying at the level of the deep inguinal ring. At operation: A right indirect inguinal hernia was found for which mesh repair was performed. On the left side, the testis, expectedly, was found at the deep ring and orchidectomy was done.

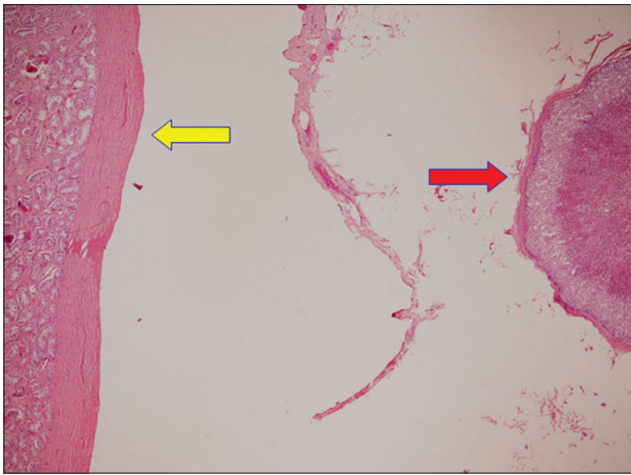
The patient recovered well and was discharged in good condition for follow-up in the outpatient clinic.

Histopathological examination of the excised testis showed atrophic changes, with adjacent adrenal rests in which the three cortical layers were represented [Figures 1-4].

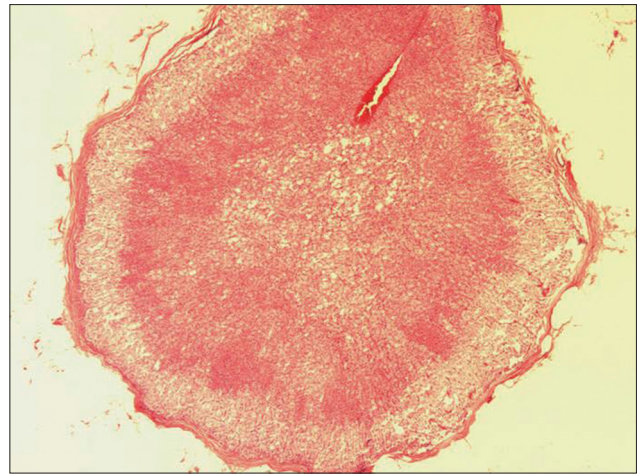
## DISCUSSION

Ectopic adrenal tissue in a juxta renal position was first reported by Morgagni in 1740.<sup>[1]</sup> Subsequently, other sites, including the inguinoscrotal path of the testis, have been reported. The estimated incidence of adrenal ectopia is 1.2-2% of groin operations. These nodules may be found along the

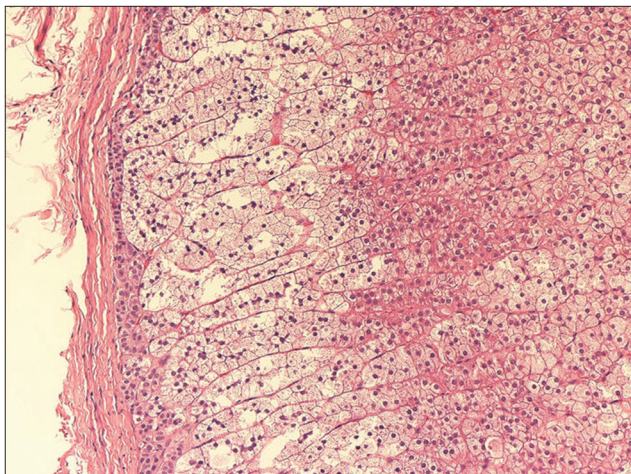
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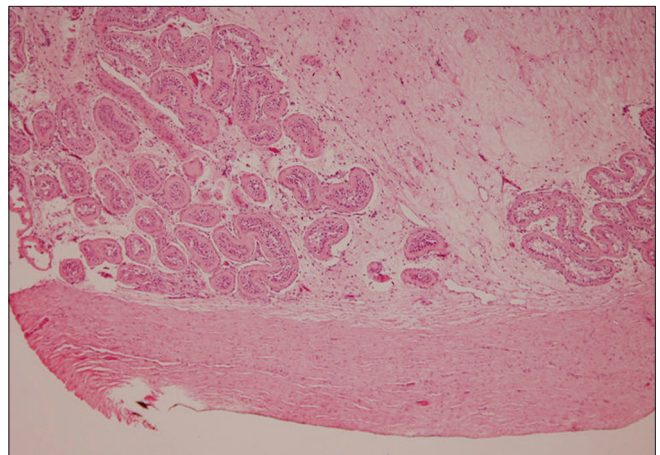
**Figure 1:** Photomicrograph (original magnification  $\times 20$ ; H and E stain) shows the testis (yellow arrow) with adjacent adrenal rest (red arrow)



**Figure 2:** Photomicrograph (original magnification  $\times 10$ ; H and E stain) showing adrenal rest with its three layers preserved



**Figure 3:** Magnified view of Figure 2 (original magnification  $\times 40$ ; H and E stain)



**Figure 4:** Photomicrograph (original magnification  $\times 40$ ; H and E stain) shows atrophic changes in the undescended testis

spermatic cord, in the hernia sac, or between the testis and epididymis<sup>[2-5]</sup> and association with undescended testis have been suggested.<sup>[6]</sup> The condition has been primarily reported in the pediatric population and, very rarely, in adults.<sup>[2,7]</sup> In their search in the English literature, Mendez *et al.*<sup>[2]</sup> found 117 reported cases in infants and children and only 25 cases in adults. Adrenal ectopia at this site is encountered mainly in males<sup>[2-5,8]</sup> and very rarely in females where the ectopic tissue lies in a paraovarian location.<sup>[9]</sup>

Grossly, ectopic adrenal tissues appear oval in shape, 1-5 mm in size and have a bright yellow or orange color,<sup>[5]</sup> and resemblance to metastatic clear cell carcinoma has been observed.<sup>[7]</sup> Histologically, the three adrenal cortical layers are present, surrounded by a fibrous capsule.<sup>[5,4]</sup>

Testicular adrenal rests have been shown to enlarge considerably in patients with congenital adrenal hyperplasia due to hydroxylase deficiency.<sup>[10,11]</sup> In such cases, they could not be

differentiated from testicular tumors.<sup>[11]</sup> Additionally, excess hormone production by testicular adrenal rests may occasionally arise due to benign<sup>[10,12]</sup> or, rarely, malignant<sup>[13]</sup> neoplastic transformation. These sequels stand behind the rationale for excising suspected nodules discovered during groin surgery. However, as their incidence is rare, a deliberate search for adrenal rests is not usually required.<sup>[3,5]</sup> In the case presented here, the ectopic tissue was incidentally found upon examining the excised testis. The three layers of the adrenal cortex were found with no evidence of hyperplasia or neoplasia. This report adds another case to the very rarely reported testicular adrenal cortical ectopia in adults. Familiarity with the gross appearance of such tissue is required in order to excise them once encountered.

### CONCLUSIONS

Adrenal rests may be incidentally found during groin surgery. As adrenal hyperplasia or neoplasia may rarely complicate their

presence, familiarity with their gross appearance is important to enable excising them when encountered.

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