

Case Report

Ectopic Adrenal Gland in Undescended Testis in an Adult: A Case Report

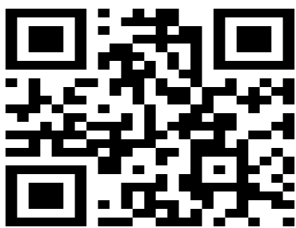
Sulakshana M. S.,* Deepti S. P., Siddiq M. Ahmed, Dayananda S. Biligi

Department of Pathology, Infosys Laboratory, Victoria Hospital Campus, Bangalore Medical College and Research Institute, Fort, K R Road, Bangalore-560002

ABSTRACT

Ectopic adrenal tissue may be present along the path of descent of the testis. This has been mainly reported in children and very rarely in adults. Here, we report a case of an adult male with undescended testis who underwent orchidectomy, and ectopic adrenal tissue was discovered in the removed specimen.

Keywords: Ectopic adrenal, undescended testis, adult



QR Code for Mobile Users

Address for Correspondence:

*Sulakshana M S

Department of Pathology, Infosys Laboratory, Victoria Hospital Campus, Bangalore Medical College and Research Institute, Fort, K R Road, Bangalore-560002

E mail: sulakshana.m.s@gmail.com

Conflict of Interest: None Declared!

(Received 18 March 2015; Accepted 16 May 2015; Published 1 July 2015) ISSN: 2347-8136 ©2014 JMPI

INTRODUCTION

Adrenal glandular tissue can be aberrantly located in many locations, including the inguinal region. Ectopic adrenal tissue has rarely been reported in adult population, the pathogenesis of which is still not fully understood [1]. According to published studies, the great majority of adrenal ectopias occur with adrenocortical tissue [2]. However, medullary ectopia is extremely unusual. Furthermore, clinical and epidemiologic features of adrenal ectopias in the inguinoscrotal region still need to be detailed. The ectopic adrenal tissue can potentially undergo hyperplasia and neoplasia [3, 4]; therefore, surgical resection is advisable.

CASE REPORT

A 30-year-old male, unmarried, presented with a swelling in the right groin, which was present since early childhood. Examination revealed an indirect inguinal hernia with undescended testis on the right side.

His routine laboratory investigations were unremarkable and ultrasound scan of the inguinal region showed normally located left testis with a right sided inguinal hernia and right testis lying

at the level of the deep inguinal ring. Mesh repair was performed for the right inguinal hernia and right sided orchidectomy was done.

We received a specimen of testis with attached epididymis, paratesticular tissue and spermatic cord. The testis measured 3x2x1 cm, with the attached spermatic cord measuring 2.5 cm in length. Cut surface of the testis was unremarkable.

Histopathological examination of the excised testis showed seminiferous tubules of varying sizes, most of them appearing hyalinised with absence of spermatogenesis. At places, only Sertoli cells were seen. There was interstitial edema with prominent Leydig cells (hyperplastic). The rete appeared immature and hyperplastic. A focal area showed adrenal rests with normal histology in which the three cortical layers were represented. The paratesticular tissue showed congestion.

A diagnosis of Atrophic testis with incidental finding of adrenal rests was made.



Figure 1: Specimen of testis showing normal testicular parenchyma and attached paratesticular tissue

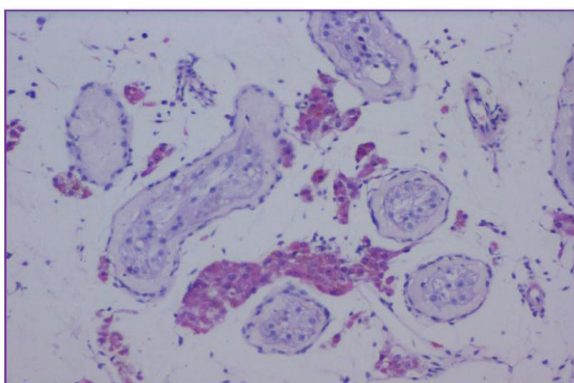


Figure 2: Thickened seminiferous tubules with absence of spermatogenesis and prominent Leydig cells in the interstitium (H&E, 10X)

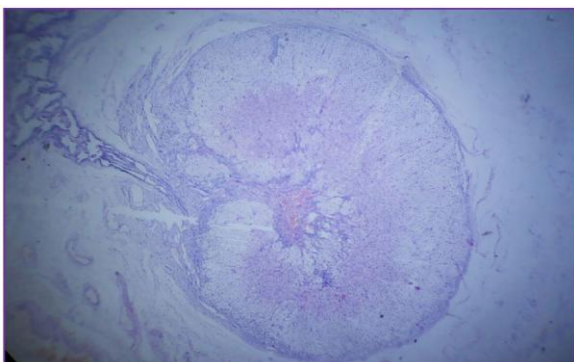


Figure 3: Ectopic adrenal rests in testis (H&E, 4X)

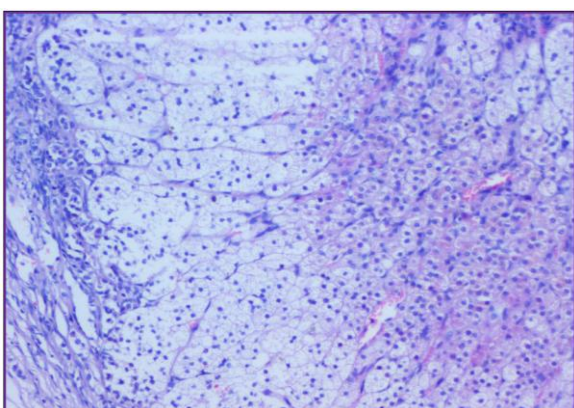


Fig 4: Ectopic adrenal rests in testis (H&E, 40X)

DISCUSSION

After ectopic adrenal tissue was first identified by Morgagni in the 1700s, several nodules of ectopic adrenal tissue were reported in many sites of the body, such as the kidney, coeliac axis, thorax, liver, lungs, and brain, and in association with the genitalia [5].

The estimated incidence of adrenal ectopia is 1.2-2% of groin operations. These nodules may be found along the spermatic cord, in the hernia sac, or between the testis and epididymis; and association with undescended testis have been suggested [6]. The condition has been primarily reported in children and, very rarely, in adults [7]. In their search in the English literature, Mendez et al.[1] found 117 reported cases in infants and children and only 25 cases in adults. Adrenal ectopia at this site is encountered mainly in males and very rarely in females where the ectopic tissue lies in a paraovarian location [8].

Grossly, ectopic adrenal tissues appear oval in shape, 1-5 mm in size and have a bright yellow or orange color, and resemblance to metastatic clear cell carcinoma has been observed[6]. Histologically, the three adrenal cortical layers are present, surrounded by a fibrous capsule.

Male gonadal structures and the adrenal cortex have the same embryological origin, which could explain the similarity of ectopic adrenal tissues with gonadal structures. Ectopic adrenal remains located away from the original adrenal tissue, consist only of adrenal cortical tissue with no adrenal medulla cells. However, adrenal medulla cells can be found in ectopic adrenal tissues with a more proximal localization. Medulla cells are observed as cellular structures of the capsule of connective tissue, usually with small blood vessels that surround these nodules [9]. In the literature, only adrenal cortex was found in ectopic adrenal tissues detected in genital regions, and adrenal medulla cells were not observed.

Testicular adrenal rests have been shown to enlarge considerably in patients with congenital adrenal hyperplasia due to hydroxylase deficiency. In such cases, they could not be differentiated from testicular tumors[10,11].

Surgical interventions are considered according to the patient's clinical symptoms caused by these ectopic tissues. Some authors have reported that ectopic tissues show compensatory functional growth when a total adrenalectomy is performed [12]. Another clinical aspect is the development of a tumor from the ectopic adrenal remains. Pheochromocytoma, Leydig cell tumors, and adrenal adenomas have been

reported to develop from these ectopic tissues, although they are not common[13-15].

Suspected nodular structures observed along the spermatic cord or the testis and epididymis during inguinoscrotal surgeries should thus be removed and evaluated pathologically.

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.

CONCLUSION

Inguinoscrotal ectopic adrenal tissues are incidentally detected lesions during surgical interventions. They are benign lesions associated with no significant symptoms. Nevertheless, it is considered to be of benefit to remove these tissues in order to perform histopathological evaluation for differential diagnoses.

ACKNOWLEDGEMENTS

My Prayers to God; my sincere gratitude and thanks to my Professors for their valuable support and guidance in presenting this case report.

REFERENCES

1. Mendez R, Tellado MG, Somoza I, Liras J, Sanchez-Abuin A, Pais E, et al. Ectopic adrenal tissue in the spermatic cord in pediatric patients: Surgical implications. *IntBraz J Urol.* 2006;32:202–7.
2. Nistal M, Paniagua R. Testicular and epididymal pathology. New York: Thieme-Stratton Inc.; 1984.
3. Ketata S, Ketata H, Sahnoun A, FakhFakh H, Bahloul A, Mhiri MN. Ectopic adrenal cortex tissue: An incidental finding during inguinoscrotal operations in pediatric patients. *Urol Int.* 2008;81:316–9
4. Vaos G, Zavras N, Boukouvalea I. Ectopic adrenocortical tissue along the inguinoscrotal path of children. *Int Surg.* 2006;91:125–8.
5. Oguz F, Yildiz T. Evaluation of children with inguinoscrotal ectopic adrenal tissues. *Turk J Med Sci* 2013 43: 553-556.
6. Rabie M, Shah M T, Jamil S. Adrenal rests associated with ectopic testis in an adult: Clinical significance. *Urol Ann* 2013 Oct-Dec; 5 (4)302-304.
7. El Demellawy D, Nasr A, Samkari A, Pastolero P, Alowami S. Aberrant adrenocortical tissue in hernia sac occurring in an adult: Case report and review of the literature. *Hernia.*2009;13:659–62.
8. Sullivan JG, Gohel M, Kinder RB. Ectopic adrenocortical tissue found at groin exploration in children: Incidence in relation to diagnosis, age and sex. *BJU Int.*2005;95:407–10.
9. Dobanovacki DS, Maric DM, Maric DL, Vuckovic N, Jokic RR, Slavkovic AR et al. Ectopic adrenocortical tissue: an incidental finding during inguinal surgery in children. *FetalPediathPathol* 2013; 31: 32–7
10. Jin HY, Choi JH, Kim GH, Lee CS, Yoo HW. Testicular adrenal rest tumors in a patient with untreated congenital adrenal hyperplasia. *Korean J Pediatr.* 2011;54:137–140.
11. Karnak I, Senocak ME, Göğüş S, Büyükpamukçu N, Hiçsönmez A. Testicular enlargement in patients with 11-hydroxylase deficiency. *J Pediatr Surg.* 1997;32:756–758.

12. Wang XL, Dou JT, Gao JP, Zhong WW, Jin D, Hui L et al. Laparoscope resection of ectopic corticosteroid-secreting adrenal adenoma. 2012; 33: 265–267. 17.

13. Vela Navarrete R, Barat A, Berrocal A, Lopez de Alda A, Quezada F. Testicular adrenal rests tumor: a difficult diagnosis. *ActasUrolEsp* 1990; 14: 146–148.

14. Abe T, Matsuda H, Shindo J, Nonomura K, Koyanagi T. Ectopic pheochromocytoma arising in the spermatic cord 5 years after removal of bilateral carotid body tumors and adrenal pheochromocytomas. *Int J Urol* 2000; 7: 110–111.

15. Borazan E, Karakök M, Baltacı Y, Bağcı C. The effects of experimentally induced intraabdominal hypertension on adrenal glands. *Turk J Med Sci* 2012; 42: 567–72.