



ECTOPIC ADRENOCORTICAL TISSUE IN INGUINAL HERNIA SAC- AN INCIDENTAL FINDING

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**ABSTRACT**

Ectopic adrenal tissue is reported near adrenal gland, kidney, retroperitoneum and hilus of gonads. It is common among the pediatric age group and rarely encountered in adults. Ectopic adrenal tissue in hernia sac is a rare finding. Here we report a case of ectopic adrenocortical tissue which was identified incidentally on microscopic examination of inguinal hernia sac in twenty seven year old man.

**KEYWORDS:** Adrenal gland, Ectopic adrenocortical tissue, Hernia sac.



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## INTRODUCTION

Ectopic adrenal tissue in the vicinity of adrenal gland was first described by Morgagni in 1740. It was reported at different sites of the body like kidney, coeliac axis, thorax, liver, lungs, brain and in association with genitalia<sup>1-3</sup>. The most common site of ectopic adrenal cortex is retroperitoneum and hilus of gonads.<sup>4</sup> Ectopic adrenal tissue in inguinal structures such as hernia sac and spermatic cord is rare in adult population.<sup>1,2</sup> We report a case of ectopic adrenocortical tissue which was identified incidentally on microscopic examination of inguinal hernia sac in 27 year old man.

## METHODOLOGY

### Case study

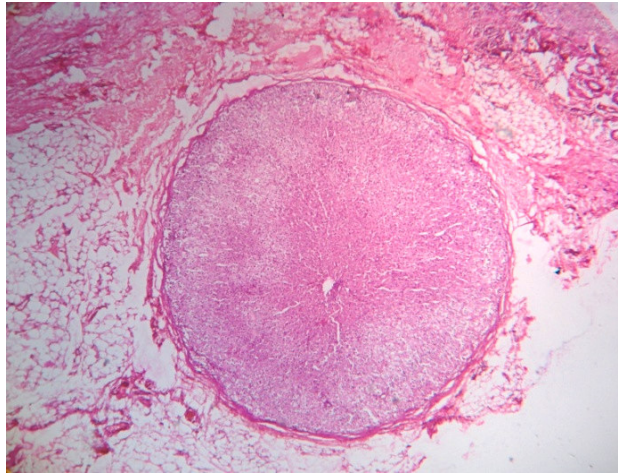
A 27 year old man presented with swelling over right inguinal region since 8 months. Swelling was gradually progressive in nature, increased on cough, walking and reduced on lying down. It was not associated with pain. He had a history of lifting heavy weights. No history of vomiting/ loose stools/ constipation. On examination swelling was around 5x4cm over right inguinal region which was prominent on coughing and decreased on lying down. No local rise of temperature or tenderness. Deep ring occlusion test was positive and getting above the swelling was negative. External genitalia including testes were normal. Systemic examination was normal. Diagnosis of right sided indirect inguinal hernia was made. Mesh hernioplasty was performed and hernia sac was sent for histopathological examination.

## RESULTS

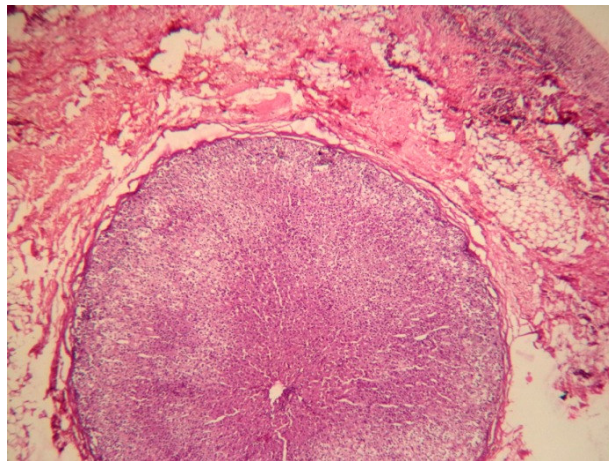
Grossly the excised sac was pale brown in colour measuring 4.5x1.5x0.5cm. Representative bits were submitted for microscopic examination. Microscopic examination of the sections studied showed the usual mesothelial-lined fibroconnective tissue. Surprisingly a well defined, encapsulated adrenal cortex tissue without medulla was noted adjacent to fibroconnective tissue [Fig 1]. This ectopic adrenal cortex showed normal zonation of glomerulosa, fasciculata and reticularis. No medullary tissue was seen [Fig 2,3]. Retrospectively the gross specimen was re-examined and found to have a tiny yellowish nodule measuring 2mm in diameter [Fig 4]. So final diagnosis offered was ectopic adrenocortical tissue in inguinal hernia sac.

## DISCUSSION

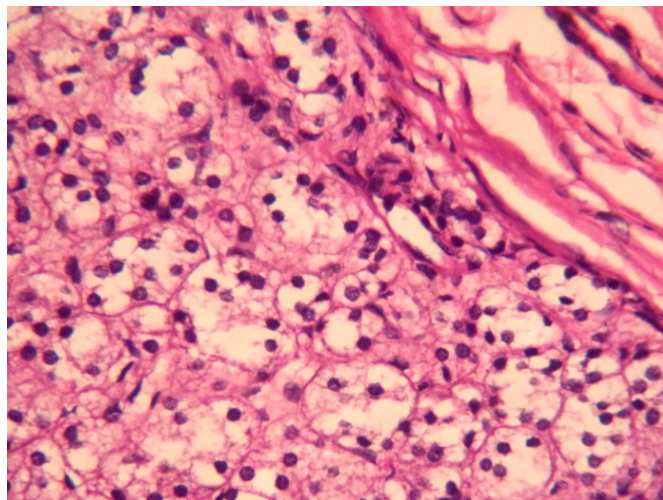
Ectopic adrenal tissue near adrenal gland proper is not a rare finding but ectopic adrenal tissue in hernia sac in adult is a rare finding.<sup>4, 5</sup> Morgagni first described yellowish nodules resembling adrenal tissue adjacent to main glands in 1740. Since then, ectopic adrenal tissue is reported at various sites, most frequently in relation to kidney with less than 100 cases near the genital structures. Of these, around 80 cases have been reported in the male genital area in childhood.<sup>5</sup> Ectopic adrenal tissue are common in children but not in adults. Oguz et al.<sup>2</sup> reported 6 cases (2.02%) of ectopic adrenal tissue among 296 patients with median age of 4.6 years. Mendez R et al.<sup>5</sup> found ectopic adrenal tissue in 13 pediatric patients (1.16%) of 1120 groin surgical exploration. Among 13 cases, 5 were diagnosed as undescended testes, 6 inguinal hernia and 2 communicating hydrocele. Normally, adrenal gland develops from 2 primordia of different origins. Adrenal cortex develops from the coelomic mesothelium during 4-5<sup>th</sup> weeks of embryonic life to form primitive cortex. Later, another cell from the same somatopleuric area is added to it to form a definitive cortex, which persists in adults. Adrenal medulla develops from neuroectoderm by 5<sup>th</sup> week and by 7<sup>th</sup> week it gets attached to the cortex and invade it. Until late in fetal development complete encapsulation of medulla does not occur.<sup>1,4,6</sup> Foci of cortex might get carried with the descending gonad because of its common embryonic origin of the adrenal gland and gonads leading to occurrence of ectopic adrenocortical tissue along the inguinal region.<sup>4,6,7</sup> True adrenal ectopia is rare, partly or complete incorporation into adjacent tissue is due to failure of separation of the developing cortex from the coelomic mesothelium. Usually ectopic adrenal glands situated closer to normal position have medullary elements, but by adult life medulla undergo atrophy. So in only 1% cases adrenal cortex and medulla can be found.<sup>4,6</sup> Normally ectopic adrenal rests are asymptomatic, as in our case it was detected incidentally on microscopic examination of hernia sac. Ectopic adrenal tissue can undergo neoplastic change or become functional liberating hormones and producing symptoms.<sup>8</sup> Such transformation can cause morbidity and mortality in patients. An interesting case of melolipoma in ectopic adrenal tissue was reported by Damjanov et al.<sup>9</sup> Rarely malignant transformation can occur in ectopic adrenal cortex. Jain SH et al.<sup>10</sup> reported a case of adrenocortical carcinoma arising from adrenal rest cells in testis. So awareness of this entity is important to avoid morbidity and mortality related to ectopic adrenal tissue.



**Figure 1**  
*Photomicrograph showing well encapsulated adrenal cortex along with fibroconnective tissue .( H&E X 40)*



**Figure 2**  
*Photomicrograph show adrenal cortical layers with zonation of glomerulosa, fasciculata and reticularis. (H&E X 100)*



**Figure 3**  
*Photomicrograph show zona glomerulosa.( H&E X400)*



**Figure 4**  
*Macrophotograph show yellowish nodule (arrow) in hernia sac.*

## CONCLUSION

Ectopic adrenal tissue in hernia sac in adult population is rare. Though it can be indolent in most of the cases as in our case, it may show hyperplasia or neoplastic transformation with complications. This possibility should

be kept in mind whenever ectopic adrenal tissue is seen at any site and should be examined carefully.

## CONFLICT OF INTEREST

Declared none

## REFERENCES

1. Takeuchi M., Okuya K., Kato Rl., et al. Adrenocortical Tissue Associated with Resected Lipoma of Spermatic Cord in an Adult. *Open Journal of Urology.*, 4:151-154, (2014)
2. Oguz F., Yildiz T., Beytur A., et al. Evaluation of children with inguinoscrotal ectopic adrenal tissues. *Turk J Med Sci.*, 43:553-556, (2013)
3. Sullivan J.G., Gohel M., Kinder R.B. Ectopic adrenocortical tissue found at groin exploration in children: incidence in relation to diagnosis, age and sex. *BJU international.*, 95:407-410, (2005)
4. Iyengar V., Pittman D.M. Ectopic adrenal gland tissue in inguinal hernia sac. *Annals of Diagnostic Pathology.*, 11:291-292, (2007)
5. Mendez R., Tellado M.G., Somoza I., et al. Ectopic Adrenal Tissue in the Spermatic Cord in Pediatric Patients: Surgical Implications. *International Braz J Urol.*,32(2):202-207, (2006)
6. Anderson J.R., Ross A.H. Ectopic adrenal tissue in adults. *Postgraduate Medical Journal.*,56:806-808 (1980)
7. Altin M.A., Gundogdu Z.H., Aksoy F. Adrenal rests in the inguinal region in children.A retrospective study. *Pediatr Surg Int.*,7:446-448, (1992)
8. David C., Schechter D.C. Aberrant adrenal tissue. *Ann Surg.*, 167(3):421-426, (1968)
9. Damjanov I., Katz S.M., Catalano E.,et al. Myelolipoma in a heterotopic adrenal gland: light and electron microscopic findings. *Cancer.*, 44(4):1350-1356, (1979)
10. Jain S.H., Sadow P.M., Nose V.,et al. A patient with ectopic cortisol production derived from malignant testicular masses. *Nat Clin Pract EndocrinolMetab.*,4(12):695-700,(2008)