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Case Report

# A mass on a patent processus vaginalis in pediatric patient: A case report

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## *ABSTRACT*

Mass on a patent processus vaginalis wall is rare. Commonly, the mass cannot be diagnosed before the operation. Encounter the mass during operation, the surgeon may hesitate to do additional procedure for this mass. Here we reported a mass on the patent processus vaginalis wall. A 2 year 8 months old boy diagnosed with hydrocele and underwent an operation for hydrocele. During the operation, we found a mass on the patent processus vaginalis wall. The mass was excised and sent for tissue pathology. Then, hydrocelectomy with high ligation was done. The child was discharged without any complications. The tissue pathological report was fibrous wall cystic lesion. Cyst on patent processus vaginalis is rare. When unintentional encounter during operation, the cyst should be totally excised and send for tissue diagnosis.

***Key words:*** mass, processus vaginalis wall, pediatric

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## Introduction

Inguinal hernia and hydrocele are the most common diseases of pediatric surgery and urology.[1,2] During operation for an indirect inguinal hernia and some hydrocele, the patent processus vaginalis should be identified, cut, and ligated. During these procedures, the surgeon may find mass on the processus vaginalis wall. Mass on the processus vaginalis wall is rare. We reported a patient with hydrocele with an incidental finding of a mass on the wall of the patent processus vaginalis.

## Case report

A 2 year 8 months old boy had scrotal hypospadias diagnosed at birth. He has no history of hypospadias in his family. After 3 doses of testosterone injection (at age 1 year, 1 year 1 month, and 1 year 2 month respectively), the first stage hypospadias repair (first stage urethroplasty) was done at age 1 year 7 month. 1 month postoperative follow-up was uneventful. However, at 8 months post operative follow-up, mass at the right scrotum presented for 4 months was found. Physical examination revealed a cystic mass at the right scrotum with positive trans-illumination test. Right hydrocele was diagnosed. The patient underwent right hydrocelectomy with high ligation (at age 2 year 8 months). During operation, the patent processus vaginalis was found and there was a palpable mass in the patent processus vaginalis. We decided to open the patent processus vaginalis (open hernia sac) and found a mass about 1 × 1 cm on the wall of processus vaginalis (Figure 1). The mass adhere to the patent processus vaginalis wall about 2 cm. from the tunica vaginalis. Mass excision with the attached patent processus vaginalis wall was done and processus vaginalis was cut and closed as normal step of indirect inguinal hernia repair. The child can be discharged without any complications. Follow-up visit at OPD is uneventful. Pathology report was fibrous walled cystic lesion with indistinct lining epithelium. Negative for malignancy.

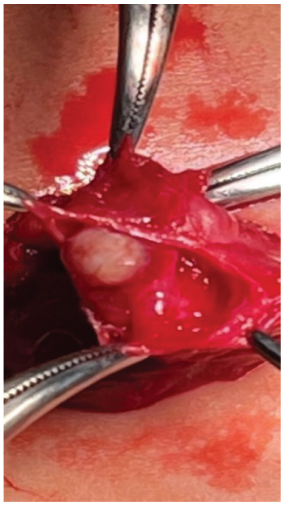

**Figure 1** the mass on the processus vaginalis wall.

## Discussion

Inguinal hernia and hydrocele is one of the most common disease of pediatric surgery and urology. The incidence of inguinal hernia in boy

is approximately 1-5 % and the incidence of hydrocele in boy is 0.7-4.7%.[1-3] During operations for indirect inguinal hernia and some hydrocele, patent processus vaginalis should be identified, cut, and ligated. Some patients had structures within processus vaginalis such as omental fat, bowel, ovary, or ovarian dermoid cyst.[4,5] Some patients had structures on the wall such as bowel wall or bladder wall as sliding hernias.

Mass at spermatic cord have various origin of the spermatic cord component. Mass can originate from the epididymis, tunica albuginea, rete testis, or an adrenal rest.[6] Both benign and malignant nature of masses had been reported such as angioma, fibrosarcoma, rhabdomyosarcoma, and teratoma.[6]

Mass on the patent processus vaginalis wall is very rare. Few articles were previously reported and no reported of incidence of this specific mass. Normally, the mass cannot be diagnosed before the operation. There were reports that the mass could be benign nature, such as epidermal cyst, or lymphangioma.[5,7] Nodular hyperplastic/ mesothelial hyperplasia was reported as a cause of spermatic cord cyst after inflammation, trauma, or tumour.[8] However, mass in patent processus vaginalis can be malignancy such as metastasis of colorectal cancer, gastric cancer, mesothelioma, neuroblastoma.[5,9,10] Here we reported a mass at the patent processus vaginalis wall in a child. The pathology reported as a fibrous walled cystic lesion with indistinct lining epithelium. This was not true cyst and could be originated from various etiology such as trauma or inflammation. In these children, he had hydrocele that developed later, after the first stage urethroplasty. So, the etiology of the cyst originated from inflammation or trauma from genital operation should be considered.

Compare with mass on processus vaginalis in adult, majority of mass in children are benign in nature; epidermal cyst, lymphangioma, reaction from trauma or inflammation. For adult, majority of mass on processus vaginalis are malignant. However, because of the nature of mass can be both benign and malignant in both children and adult, a mass on the patent processus vaginalis wall found during operation should be excised with the attached processus vaginalis wall and sent for tissue pathology.

Mass at the processus vaginalis wall is uncommon situation for surgeon encounterd during inguinal hernia and hydrocele operation. Both benign and malignant nature of mass can be found. The mass and the attached structures should be excised and sent for tissue pathology.

## References

1. Ein SH, Njere I, Ein A. Six thousand three hundred sixty-one pediatric inguinal hernias: a 35-year review. J Pediatr Surg. 2006;41(5):980-6.
2. อัครพล มุ่งนิรันดร์. ไส้เลื่อน inguinal และถุงน้ำอัณฑะ. ใน: อัครพล มุ่งนิรันดร์, บรรณาธิการ. กุมารศัลยศาสตร์. กรุงเทพฯ: สาขาวิชากุมารศัลยศาสตร์ คณะแพทยศาสตร์

ศิริราชพยาบาล มหาวิทยาลัยมหิดล; 2560. หน้า 15-50.
3. Hall NJ, Ron O, Eaton S, Pierro A. Surgery for hydrocele in children-an avoidable excess? J Pediatr Surg. 2011;46(12):2401-5.
4. Shetty NS, Vallabhaneni S, Patl A, Babu MM, Baig A. Unreported location and presentation for a parasitic ovarian dermoid yst in an indirect inguinal hernia. Hernia. 2013;17:263-5.
5. Poenaru D, Jacobs DA, Kamal I. Unusual findings in the inguinal canal: A report of four cases. Pediatr Surg Int. 1999;15:515-6.
6. Arlen M, Grabstald H, Whitmore WF Jr. Malignant tumors of the spermatic cord. Cancer. 1969;23: 525-32.
7. Karnak I, Haliloglu,M. Guecer S. Epidermal cyst in the patent processus vaginalis: An unusual inguinal mass in a girl. Th Turgish Journal of Pediatrics. 2015;57:3.
8. Chen HJ, Li DH, Zhang J. A case of spermatic cord cyst with nodular histiocytic/mesothelial hyperplasia. Asian J Androl. 2017;19(4):505-6.
9. Law T, Chiong E. Patent processus vaginalis as a conduit for tumoral seeding: a rare presentation of port site metastasis. ANZ J Surg. 2017;89:E216-7.
10. Schaefer IM, Sauer U, Liwocha M, Schorn H, Loertzer H, Fuzesi L. Occult gastric signet ring cell carcinoma presenting as spermatic cord and testicular metastases: “Krukenberg tumor” in a male patient. Pathol Res Pract. 2010;206(7):519-21.