CASE REPORT PEER REVIEWED | OPEN ACCESS

Huge multilocular spermatocele in a patient with left scrotal swelling

Daisaku Hirano, Hiroki Yoshioka, Yuki Irie, Fuminori Sakurai, Shou Ohno, Yoshiaki Kusumi

ABSTRACT

Introduction: Most spermatoceles are asymptomatic, unilocular, and small in size. They are typically cystic dilatations of the tubules of the efferent ductus in the head of the epididymitis, and less commonly dilatations of the tubules of the rete testis or aberrant ductus. However, huge spermatoceles are rare and to cause discomfort and cosmetic problems.

Case Report: We present a case of a 42-year-old male with huge multilocular spermatocele mimicking hydrocele, who suffered from left scrotal enlargement for several years. Scrotal ultrasonography and magnetic resonance imaging (MRI) showed multilocular cystic spaces at the head of the left testis. Surgical exploration was performed and the size of the removal specimen was approximately 8.5×6.5×6.0 cm. The aspirated fluid contained spermatozoa, and histopathological and immunohistochemical examinations of the specimen showed a multilocular spermatocele arising from the epididymitis. He has been followed up without any significant complaints and recurrence one year after the surgery.

Conclusion: It is important to keep in mind for spermatocele when encounter giant cystic diseases with multilocular appearance adjacent to the testicle. In such cases surgical exploration can be recommended.

Keywords: Huge, Multilocular, Spermatocele, Spermatocelectomy

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INTRODUCTION

Spermatoceles are a common type of extra-testicular cyst filled with fluid including spermatozoa. They are typically cystic dilatations of the tubules of the efferent ductus in the head of the epididymitis, and less commonly dilatations of the tubules of the rete testis or aberrant ductus [1]. Most spermatoceles are asymptomatic, unilocular, and small with a smooth surface and located at the head of the epididymitis on the physical examination. However, they occasionally become large to cause discomfort and cosmetic problems [2, 3]. These uncommon spermatoceles are occasionally hard to distinguish from other intra-scrotal cystic diseases such as hydrocele and lymphangioma. Surgical intervention for a spermatocele is considered when the spermatocele has grown to an uncomfortably large size and had symptoms.

Recently, we experienced a case of huge spermatocele with multilocular appearance treated by surgical

extirpation, and in this case immunohistochemical examinations were useful for differential diagnosis between spermatocele and lymphangioma. We herein report the rare case of spermatocele and briefly review the literatures.

CASE REPORT

A 42-year-old male with a comorbidity of chronic rheumatoid arthritis was referred to our institution for the evaluation of a left scrotal swelling with discomfort. The swelling had gradually progressed in size over the preceding several years, and rapidly had grown larger in a few months prior to the visit of our institution. Physical examination revealed a soft swelling scrotal lesion with a slight tender, compressibility, and transillumination, which mimicked a hydrocele. Any prior history of trauma or infection in the genital organs was absent. Laboratory tests were unremarkable. Scrotal ultrasonography test revealed multilocular cystic lesions at the head of the left epididymis (Figure 1A). On T2-weighted image magnetic resonance imaging (MRI) the mass was present in the upper part of the left testis with equivalent to the signals of multilocular cysts (Figure 1B).

Surgical extirpation through a scrotal approach was performed because of uncomfortable large size and being unable to completely exclude a comorbidity of tumor in the multilocular cyst. The multilocular cystic mass was located on the head of the left epididymitis (Figure 2A). The mass was separated gently with blunt dissection in some regions using an electrocautery device from the head of the left epididymitis. The size of the removal specimen was approximately 8.5×6.5×6.0 cm surrounding with very thin wall (Figure 2B).

The fluid aspirated from the removal multilocular cyst was grossly clear and yellowish in color, while the aspirated fluid test showed many mature immotile spermatozoa. The specimen for pathologic examination revealed multiple cystic dilatations of the ducts in the head of the epididymis. The walls of the multilocular cyst consisted of simple cuboidal epithelium on predominant fibroconnective tissue with focal cystic formation in hematoxylin-eosin stain (Figure 3A). Immunohistochemically, pan-cytokeratin as an epithelial marker in the epididymis was positive (Figure 3B), while D2-40 as a maker of lymphatic endothelial cells was negative (Figure 3C). From these findings the patient was diagnosed with multilocular spermatocele arising from

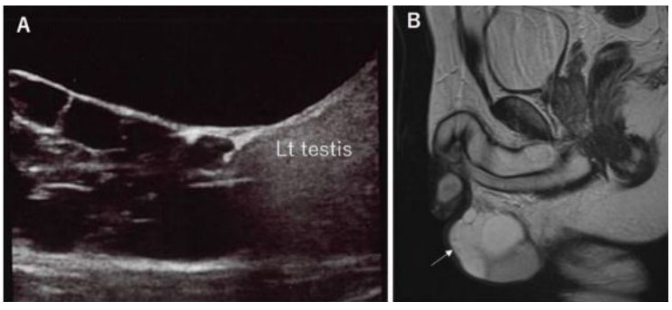

Figure 1: (A) Longitudinal sonogram of the left scrotum reveals multiple cystic spaces at the upper part of the left testis. (B) Longitudinal section of MRI shows multiple cystic masses (allow) in the upper part of the left scrotum.

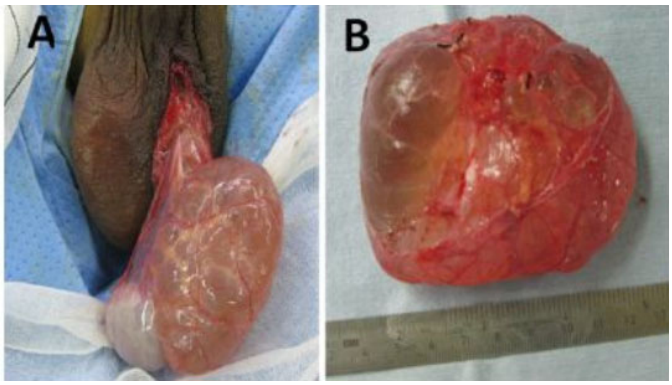

Figure 2: (A) The cyst is adherent to the upper part of the left epididymitis before the removal. (B) The resected specimen shows multiple cystic appearance.

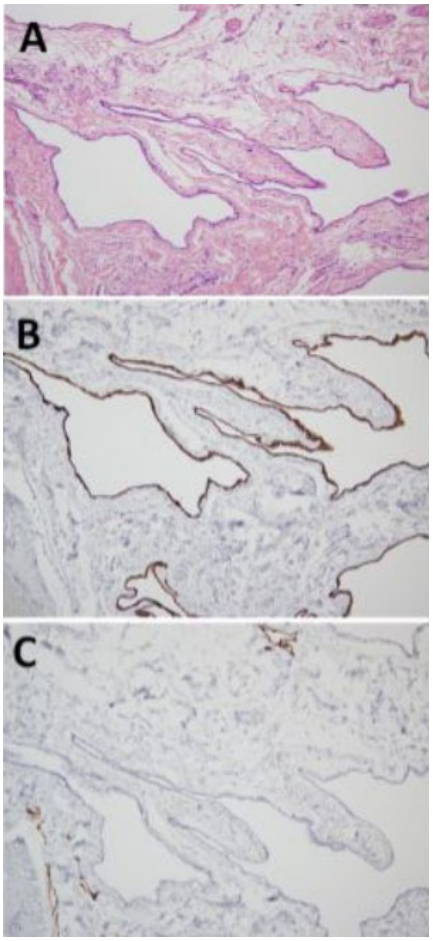

Figure 3: (A) Hematoxylin and eosin stain shows multiple cystic formations with simple cuboidal epithelium on predominant fibroconnective tissue. (B) Immunohistochemical staining reveals positive pan-cytokeratin and (C) negative D2-40. Original magnification ×200.

the epididymis. He has been followed up without any significant complaints and recurrence one year after the surgery.

DISCUSSION

Spermatocele is a retention cyst arising from some portion of sperm conducting tubules of the epididymis, rete testis, or efferent ductuli. Most spermatoceles are asymptomatic and a single cyst with less than 1 cm, which tend to be overlooked [4]. The chance of the existence of spermatocele is approximately 30% of asymptomatic patients undergoing scrotal ultrasound for other reasons [5]. However, a very few cases, like our case, have grown to an uncomfortably large size with a multilocular appearance [2, 3].

Multiple etiologies have been proposed such as trauma, infection, or inflammatory process, vasectomy, and inguinoscrotal surgery. Itoh et al. [6] suggested that intraductal blockage of the narrow lumen of the efferent ducts by degenerated germ cells may result in the formation of spermatoceles. However, the exact etiology of spermatocele remains obscure. In our case the cause of spermatocele was not definitively identified because of no evidence of any prior history of trauma and infection in the genital organs except for the comorbidity of chronic rheumatoid arthritis, which was less possibility of the cause of spermatocele.

Spermatocele can be generally differentiated from a hydrocele at imaging diagnosis such as ultrasound and MRI because the hydrocele surrounds the testicle while the spermatocele displaces the adjacent testicle, and the definite diagnosis of spermatocele requires the presence of filling spermatozoa within the cyst fluid. Several previous reports [7, 8] have showed the existence of spermatozoa in the specimens obtained by surgical extirpation based on histopathological examination. Although in our case many mature immotile spermatozoa were found in the aspirated fluid on microscopic examination, it was unable to identify spermatozoa in the specimen based on the histopathological examination possibly due to wash away during the specimen processing. In this case the immunohistochemical examinations using an epithelial marker of pan-cytokeratin and a lymphatic endothelial marker of D2-40 were useful for differential diagnosis between spermatocele and lymphangioma.

Most spermatoceles do not require treatment. However, painful or large, socially embarrassing spermatoceles should require some interventions such as percutaneous aspiration and sclerotherapy with a sodium tetradecyl sulfate solution [9], and radical surgery. The former therapy is minimally invasive, simple, safe, and reasonably efficacious treatment option, but not suitable for huge multilocular type, like our case. In cases of giant multilocular spermatocele surgical exploration can be recommended.

CONCLUSION

Most spermatoceles are asymptomatic, unilocular, and small in size, while giant multilocular spermatoceles are rare and tend to have symptoms. It may be important to keep in mind for spermatocele when encounter huge cystic diseases with multilocular appearance adjacent to the testicle. Surgical exploration can be recommended for such rare cases.

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Author Contributions

Daisaku Hirano – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Hiroki Yoshioka – Acquisition of data, Analysis of data, Interpretation of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Yuki Irie – Acquisition of data, Analysis of data, Interpretation of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Fuminori Sakurai – Acquisition of data, Analysis of data, Interpretation of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Authors declare no conflict of interest.

Data Availability
All relevant data are within the paper and its Supporting Information files.

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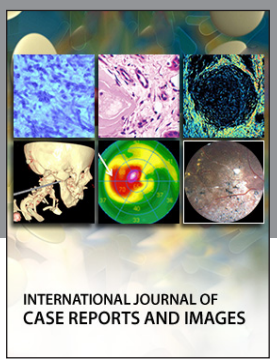

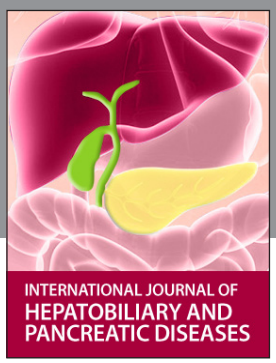

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