

CASE REPORT

Both-sided Large Abdominoscrotal Hydrocele Associated with Testicles Atrophy

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Abdominoscrotal hydrocele is unusual condition with large scrotal hydrocele, which communicates through narrow inguinal channel with abdominal component. Abdominoscrotal hydrocele is not a benign condition, because complications such as acute appendicitis, testicular dysmorphism, ureterohydronephrosis, paratesticular malignancy have been described earlier. This case study describes one year old boy with both-sided abdominoscrotal hydrocele. Abdominal masses connected with hydrocele need to induce a suspicion of this condition. Early diagnosis and existing surgical techniques for treatment of this disorder are the key factors in prevention of complications associated to this disorder. **KEY WORDS:** ABDOMINOSCROTAL HYDROCELE, ABDOMINAL MASS. TODDLER—SURGICAL TREATMENT, COMPLICATIONS.

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1. INTRODUCTION

Abdominoscrotal hydrocele (ASH) is usual condition with large scrotal hydrocele, which communicates through narrow inguinal channel with abdominal component. This condition is very rare among paediatric population and so far, less than 125 cases have been reported with one-sided abdominoscrotal hydrocele. Both-sided ASH is even rarer and so far, less than 20 cases have been reported among paediatric population (1, 2).

It is assumed that ASH occurs by the formation of scrotal hydrocele, under the influence of higher fluid pressure in it, propagating through inguinal channel into abdominal cavity during the first few months of life (3). Abdominoscrotal hydrocele is not a benign condition, because complications such as acute appendicitis, testicular dysmorphism, ureterohydronephrosis and paratesticular malignancy have been described earlier (4).

2. CASE REPORT

Healthy eleven months old boy was admitted to Pediatric clinic of the University Clinical Centre due to both-sided large hydrocele. During medical examination, it was found that the boy had both-sided tense hydrocele and tumour masses on both sides in lower parts of abdomen. Parents said that immediately at birth, they could see both-sided hydrocele on their son, which were increasing and becoming tenser as the time was passing. During medical assessment, movement of abdominal masses at pressure to the same sided hydrocele was noticed, which was more evident on the right side (Figure 1).

By ultrasound examination, large cystic anehogenous formations in abdomen, on both sides were found, paravesic, demonstrating transition from cystic abdominal formation into ingui-

nal channel (Figure 2). Computerized tomography (CT) was used to confirm the diagnosis of both-sided abdominoscrotal hydrocele, where both side structures, in the form of sand watch, could be seen at coronal profile (Figure 3).

Surgical treatment included total excision of both-side abdominoscrotal hydrocele through inguinal approach, where hydrocele was first punctuated to evacuate the content, and then a complete excision of abdominal and scrotal part of hydrocele was done including reconstruction of both inguinal channels. Abdominal portion of hydrocele extended retroperitoneally and no communication with peritoneal cavity was noted. During operation, right testicle was significantly decreased, morphologically changed, entirely without connection with ductus spermaticus, which ended completely and with no traces of epididymal tissue near the right testicle. The remains of the right testicles are



FIGURE 1. Exterior look of a child with both-sided abdominoscrotal hydrocele



FIGURE 2. Ultrasound assessment of abdominal hydrocele component with transition into inguinal channel



FIGURE 3. Coronal CT scan of both-sided abdominoscrotal hydrocele

removed and sent to histological analysis, which confirmed the testicle atrophy with interstitial fibrosis and a complete lack of epididymal tissue. Based on macroscopic assessment, left testicle was of a proper appearance. Post-operative procedure went smoothly and during the medical control after 6 months, both sides of inguinoscrotal regions looked normally, without any signs of hydrocele recidives and further development of the left testicle was normal.

3. DISCUSSION

Abdominoscrotal hydrocele was described for the first time in 1834 by

Dupuytren, who called it *hydrocele en bissac*, while Bickle defined this condition in 1919 as abdominoscrotal hydrocele (3). It is assumed that the lesion develops when the processus vaginalis obliterates along the inside opening of inguinal channel, which results with fluid accumulation in tunic vaginalis. Increased pressure within hydrocele occurring with fluid accumulation propagates through inside opening of inguinal channel, which is enabled and guided with non-stretchable walls of inguinal channel (5). It was published earlier that (6) abdominal part of abdominoscrotal hydrocele may be laid retroperitoneally or preperitoneally, and in our case the abdominal component was laid retroperitoneally. Diagnosis of this lesion should be established by physical assessment and ultrasound check, which should be enough to confirm the abdominoscrotal hydrocele diagnosis. During physical assessment, it was noticed that at pressure to abdominal component,

scrotal component increased and vice versa, which was called „springing back ball“ (7). Although some authors include diagnostic processing and magnetic resonance and computerised tomography, these invasive methods should be kept for clear cases after ultrasound check and for critically diseased children (8).

Spontaneous withdrawal of abdominoscrotal hydrocele was described in one case only (9). Considering the complications associated with abdominoscrotal hydrocele such as ureterohydro-nephrosis (10), acute appendicitis (2),

testicular dysmorphism (11) and paratesticular malignant mesothelioma (12), surgical treatment as selected treatment is recommended after the establishment of the exact diagnosis (13). Some authors (3) developed and proposed algorithm for treatment of abdominoscrotal hydrocele, which included the option of conservative treatment and monitoring of such children from neonatal period for several months, in expectation of spontaneous resolution. If, during that period, eventual complications are noticed, such children should go to surgical treatment. Most frequent approach used in surgical treatment of abdominoscrotal hydrocele is inguinal approach (3) which we used in case of our patient, though there are reported cases that were treated in scrotal way with less invasive surgical treatment (1, 14, 15) and laparoscopic methods (16). Selection of surgical technique is individual in terms of the approach to surgical treatment of patient with abdominoscrotal hydrocele. In case of our patient, right testicle was morphologically changed, but histologically, the testicle atrophy with interstitial fibrosis and complete lack of epididymis was confirmed.

The available literature does not report any case of abdominoscrotal hydrocele associated with testicles atrophy and complete lack of epididymis at surgical treatment. So far, morphological testicle disorders have been described, without histological confirmation of interstitial fibrosis. So far, histological analyses of testicle with dysmorphism have shown normal histological structure of testicle tissue (17). In one case, lack of epididymis near testicle was described, but histological analysis confirmed the existence of epididymal tissue incorporated into the hydrocele wall (18).

Most of testicles with dysmorphism achieved in post-operative period a complete recovery (1). In the light of these facts, surgical treatment is preferable type of treatment for patients with abdominoscrotal hydrocele, because the approach is the least invasive, post-operative complications are rare, and eventual consequences associated with abdominoscrotal hydrocele are avoided (3, 15).

4. CONCLUSION

Abdominoscrotal hydrocele is a benign disturbance, which sometimes has serious complications. Abdominoscrotal hydrocele should always be considered when there is a patient with scrotal hydrocele and abdominal mass. Detailed monitoring of newborns with tense hydrocele is recommended, because the formation of abdominal component and occurrence of abdominoscrotal hydrocele may be expected in their case. All the patients with abdominoscrotal hydrocele must be processed diagnostically in details, with a focus on eventual complications associated with this condition. Surgical treatment, regardless the technique selected by the surgeon, represents a method of the selection in abdominoscrotal hydrocele treatment and is accompanied by rare complications. Close post-operative monitoring of such patients after the treatment is recommended.

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