Archives of Urology

ISSN: 2638-5228

Volume 1, Issue 2, 2018, PP: 10-14

Spontaneous Subcapsular Renal Haematoma in Adolescents: Report of Two Cases

Dušanka Dobanovački[1*], Nada Vučković[2], Dragan Šarac[1], Mišo Dukić[3], Milanka Tatic[4]

[*1]Pediatric Urologist, Assistant Professor, MD, PhD, Pediatric Surgery Clinic, Institute for Children and Youth Health Care of Vojvodina Medical Faculty, Novi Sad, Serbia.

[2] Pathology Department, Professor, MD, PhD, Medical Faculty, Novi Sad, Serbia.

[1]Urologist, MD Pediatric Surgery Clinic, Institute for Children and Youth Health Care of Vojvodina Medical Faculty, Novi Sad, Serbia.

[3]Urologist, MD, Clinic of Urology, Medical Centre of Vojvodina, Novi Sad, Serbia.

[4]Anesthesiologist, MD, PhD, Professor Institute for Oncology, Sremska Kamenica, Serbia.

dudob@yahoo.com

***Corresponding Author:** Dušanka Dobanovački, MD, PhD, Assistant Professor, Pediatric Surgery Clinic, Institute for Children and Youth Health Care of Vojvodina Medical Faculty, Novi Sad, Serbia.*

Abstract

***Introduction**: Spontaneous subcapsular renal hematoma in adolescence is a rare. The pathological finding is bleeding between the parenchyma and the intact kidney capsule. There is no history of trauma, blood or blood vessel diseases, or taking anticoagulant therapy.*

Case Presentation:

Patient 1: Twelve year old girl suffered a pain in the right lumbar region. The ultrasonographic examination revealed 10 mm subcapsular hematoma on the right kidney, the left one was normal. The trauma and other diseases were excluded as the cause of bleeding. Haematoma descreased in next few months and was completely absorbed after six months. Eight years follow up presented excellent genetal condition.

Patient 2: Fifteen years old boy was experienced a sudden very severe pain in the left lumbar region at rest time. He was admitted at emergency depatrment and renal sonography revealed 20 mm subcapsular bleeding on the left kidney, the right one was as normal as other organs in abdominal compartment. Next month haematoma increased up to 25 mm. Trauma was excluded as a cause. Laboratory screning, CT and MR imaging didn't find the cause of haemorrhage. Therapy were "bed and rest" and antibiotic four weeks. Resorption of hematoma was very slow in next months and after a year it completely disappeared. Ten years later all morphological and biochemical tests of the both kidney are satisfied.

***Conclusion:** A conservative treatment should be prefered in the adolescent period for spontaneous subcapsular renal hematoma. Parents and patients are advised to continue regular monitoring of kidney status and function, general condition and arterial pressure.*

Keywords: *subcapsular renal hematoma, spontaneous, adolescent, conservative approach*

Introduction

Spontaneous subcapsular renal hematoma (SSRH) presents a rare finding in clinical urology practice, particularly among the adolescents. Patients had no history of trauma. The onset of sudden different grade flank pain could be the first sign. Etiology investigation sometimes presents diagnostically challenge but can be solved by advances imaging modalities (1). Therapeutic approach depends on the diagnosis: conservative treatment if the etiology is benign or not clear, and surgical if any renal neoplastic lesion is suspected (2,3)

Here we report two cases of SSRH in adolescent period of age proved to be spontaneous renal subcapsular hematoma, and conservative clinical approach with good outcome.

Case Presentation

Case 1

Twelve years old previously perfect health girl suffered a sudden right flank pain. The abdominal ultrasonographic examination registered 10 mm subcapsular hematoma on the right kidney (Fig. 1), normal left kidney and not any lymph abdominal nodes. External trauma and other diseases were excluded as the cause of bleeding after laboratory tests and CT scan. Physical examination, except mild tenderness in the right flank, was normal. "Bed and rest" and antibiotic therapy were applied for the first two weeks. She normally attended the school lessons but was released of calisthenics one year. Few months follow-up by renal ultrasonography revealed gradually reducing of haematoma and completely absorbtion after six months. Eight years follow up biochemistry, renal sonography and general condition of the patient were excellent.

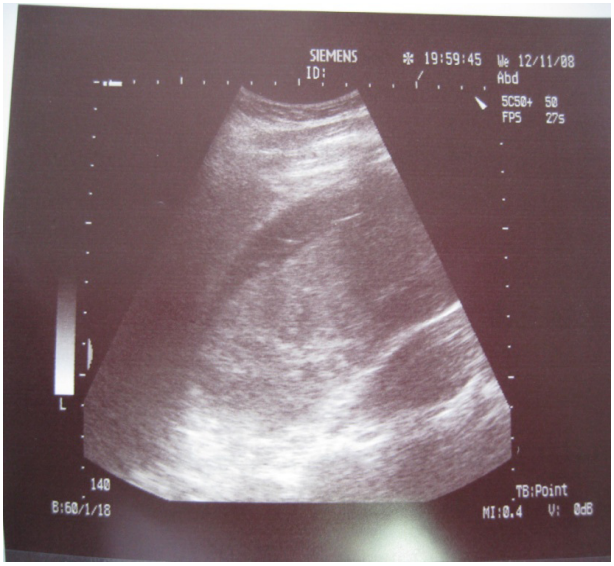

Fig 1. *Ultrasonography aspect of subcapsular renal haematoma.*

Case 2

Fifteen year old boy suddenly suffered a great pain in the left lumbar region at rest time. He was immediately admitted to hospital. The abdominal ultrasonographic examination showed SSRH 20 mm on the left. Tenderness of left lumbar region was present in physical examination. The complete laboratory tests were normal. CT scan confirmed a fresh haemorrhage surrounding the renal tissue, and excluded malignancy or other parenchyma lesions (Fig.2). Despite the advanced imaging the cause of haemorrhage haven't been found. General condition and arterial pressure were normal. Symptomatic treatment including analgetic plus antibiotic started. On repeated CT scan after three weeks extension of heamathoma increased up to 25 mm and pressure of the renal parenchyma were noticed (Fig. 2). CT scan with contrast media and MRI digital angiography showed chronic features of haemorrhage in subcapsular blood accumulation and good renal excretion. Malignant lesion and vascular diseases were excluded and it was a reason we continue conservative treatment. Resolution started slowly. After a year the haematoma completely disappeared. Next ten years he underwent general urology examination yearly: ultrasonography investigation, arterial blood pressure analysis of renal function and biochemistry of urine were normal.

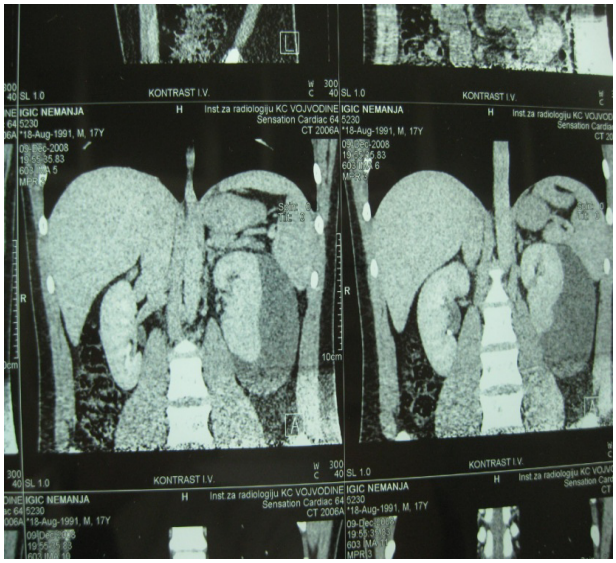

Fig 2. *Co-axial abdominal CT showed subcapsular hematoma over the lateral aspect of the right kidney.*

Discussion

Spontaneous rupture or renal parenchyma have been first reported by T. Bonet, 1679 (4). But Carl Reinhold August Wunderlich, 1856 first described and publicated the clinical picture of spontaneous renal bleeding with accumulation of blood into the subcapsular and

perinephric spaces with suspicion of the presence of an underlying malignancy (5). Sudden and very painful onset with manifestation of hypovolemic shock is named after the German physician Wunderlich Syndrome. In literature presentation of acute flank pain, tenderness and symptoms of internal bleeding is also known as "Lenk's triad" (6).

A few series and case reports were published since than (7, 8, 9). According to meta-analysis done by Zhang et al. (9) in 61,5% cases haematoma were due to tumors (31.5 malignant and 29.7% benign), angiomyolipoma being the most benign neoplasm (10,11), 17% cases were due to vascular disease, and some were due to infection (7,8). A cases of SSRH following aspirin treatment has been reported (12,13). Also it has been reported secondary to chronic haemodialysis patients (14). In 5-15% of cases the cause can not be found (15.).

In literature SSRH is described as a spontaneous nontraumatic renal bleeding into space between renal parenchyma and intact its capsule causing different degree of compression to the renal parenchyma. Sometimes haemorrhage is notice even in perinephric space (10). The absence of trauma was reported in all patients. Both our patients denied trauma but despite no evidence of recent trauma clinicians not to neglect that renal injury would developed due to increased intra-abdominal and retro-peritoneal pressure during sport activity particularly in adolescent population (16).

Clinical manifestations can varied and be presented with non-specific symptoms and signs (10) usually depending on the degree of the haemorrhage. In general, sudden onset of acute lumbar pain, nausea and vomiting and signs of hypovolaemic shock should be the initial in history. Sometimes abdominal pain and clinical finding could mimic appendicitis (17). Physical examination usually reveal tenderness of lumbar region, palpable flank mass if the kidney tumor is presented, or could be normal. The clinical presentation of these patients may very depending on the degree and duration of bleeding.

In basic laboratory screening haematuria and decreased haemoglobin could be common findings. Coagulation study is necessary. Urinalysis and renal biochemistry could be normal. Ultrasonography or other modern modalities have to be involved in searching the etiology - ultrasonography initially revealed renal mass or degree of subcapsular haemorrhage on one side, normal opposite kidney, and of lymph nodes if they are enlarged.

If the diagnosis is a dilemma CT scan, MRI digital subtraction angiography helps in diagnostic and therapeutic management (18). CT is useful technique for evaluation the extension of the haematoma and identified the cause and rescanning in follow up is advised. MRI may help in cases when CT scan is contraindicated or if the small tumour is suspected. Selective renal angiography has been advised when vascular lesions are suspected (19). In our first case ultrasonography was diagnostic and follow up modality. In second case CT scan and MRI were used to determine the extension of hematoma but cause was not identified.

In the past time, renal tumour was thought to be the cause of SSRH and radical nephrectomy was advised (20,21). In hemodynamically unstable patients with life-threatening haemorrhage emergent nephrectomy was always required.

Today with better resolution of imaging modalities many authors advise the therapeutic approach depending on the diagnosis because kidney can be salvaged. (2,22,23,24,25). The appropriate treatment depends on the accuracy of diagnosis and determination of its cause. When malignancy as cause is excluded, the haemorrhage is self-limiting and the patient is responsive to fluid resuscitation, the patient can be managed conservatively correlated with symptoms (18). Renal arteriography and selective embolisation may benefit in haemodynamically stable patients to control the bleeding and avoid surgery. Treatment with percutaneous drainage and urokinaze injection (2) could be recommended.

In some cases the new imaging modalities an laboratory screening failed to demonstrate the etiology of SSRH and therapeutic dilemma for urologist exists as in our two cases. Aware of long life need kidneys at adolescents we decided to choose conservative treatment for our patients. The decision was support with absence of malignancy or other diseases. It was a great responsibility in Case 2 but we are satisfied with good outcome in long follow up.

Conclusion

Spontaneous subcapsular renal haematoma in adolescent period could be a difficult diagnostic and therapeutic task to urologist approaching to the list of etiology for they need their kidneys for very long time. With no known cause of SSRH in adolescent age and stable general condition we suggest conservative approach and long regular follow up.

References

[1] Singh V, Jayaram S, BR Kumar D. Spontaneous Subcapsular Renal Haematoma: A Case Report. J Clin Diagn Res 2017, 11(8): 13-4.

[2] Shen Z, He W, Liu D, Pan F, Li W, Han X, Li B. Novel technique for the treatment of large subcapsular renal hematoma: combined use of percutaneous drainage and urokinase injection. Int Urol Nephrol. 2014 Sep;46(9):1751-5.

[3] Jian-feng Liu, Yong-hong Cai, Ke-zhong Zhao, Zhang Lian, Rui-hong Han, De-li zhag, et al. Urinary infection and spontaneous subcapsular renal hematoma. Available at https://www.thwisn.org/education/education-topics/global-nephrology...last modified 2012.

[4] Bonet T. Sepulchretum, sive anatomia practica ex cadaverbius morbobdenatis. Geneva: L. Chouet; 1679.

[5] Wunderlich CRA. Handbuck der Pathologie und Therapie. In: Polkey,Vynalek, editors. 2nd ed. Stuttgart, Ebner and Seubert; 1856.

[6] Lenk R. Uber Massenblutungen in das Nirenlager. Dtsch Zeits Chir.1909;102:222-36.

[7] Polkey HJ, Vynalek WJ. Spontaneous non traumatic perirenal and renal haematomas. Arch Surg 1933; 26: 196.

[8] Novichi DE, Turlington JT, Ball TP. The evaluation and management of spontaneous perirenal hemorrhage. J Urol 1980;123:764-5.

[9] Zhang JQ, Feilding JR, Zou KH. Etiology of spontaneous perirenal hemorrhage: a meta-analysis. J Urol 2002;167:1593-6.

[10] Katabathina VS, Katre R, Prasad RS, Surabhi VR, Shanbhogue AK, Sunnapwar A. Wunderlich syndrome: cross sectional imaging review. J Comput Assist Tomogr 2011; 35(4):425-33.

[11] Chronopoulos PN, Kaisidis GN, Vaiopoulos CK, Perits DM, Varvarousis MN, Malioris AV. et al. Spontaneous rupture of a giant renal angiomyolipoma-Wunderlich'ssyndrome:Report of a case. Int J Surg Case Rep. 2016;19:140-3.

[12] Yamamoto K,Yasunaga Y. Antiplatelet therapy and spontaneous perirenal hematoma. Int J Urol 2005, 12:398-400.

[13] Ferrando F, Budia A, Mira O, Amparo V, Justo A. Spontaneous Renal Subcapsular Hematoma in an Anticoagulated Patient. Clin Appl Thrombosis/Hemostasis 2006; 12:89-92.

[14] Milutinovich J. Spontaneous retroperitoneal bleeding in patients on chronic haemodialysis. Ann Inter Med 1977; 86:189.

[15] Toricelli P, Lo Russo S, Renzi E, Tazzioli G. Spontaneous renal hematoma. Report of 4 cases. Minerva Urol Nefrol 2000; 52(1):37-43.

[16] Kasikcioglu E, Kayserilioglu A, Kadioglu A. Can renal hematoma occur without a direct trauma during exercise? A case report. J Sports Sc Med 2004;3:101-3.

[17] MackKenzie AR. Spontaneous subcapsular renal haematoma report of case misdiagnosed as Ac.Appendicitis. J Urol 1960; 84: 243.

[18] Gundeti MS, Jain M, Bokare DS, Joshi AS, Rathi SS, Oza UG, et al. Spontaneous (nontraumatic) retroperitoneal haemorrhage of renal origin. BHJ Issue Special Vol 41 No 3, july 1999(No 22).

[19] Sebastià MC, Pérez-Molina MO, Alvarez-Castells A, Quiroga S, Pallisa E. CT evaluation of underlying cause in spontaneous subcapsular and perirenal hemorrhage. Eur Radiol1997;7(5):686-90.

[20] Kendall AR., Senay BA, Coll ME. Spontaneous subcapsular renal haematoma: Diagnosis and management. J Urol 1988; 139: 246-50.

[21] Bagley DH. Spontaneous retropertoneal haemorrhage from renal carcinoma. JAMA 1982; 248: 720.

[22] Koo V, Duggan B, Lennon G. Spontaneous rupture of kudney with-perirenal hematoma:

A conservative approach. Ulster Med J. 2004;73:53-6.

[23] Morgentaler A, Belville JS, Tumeh SS, Richie JR, Loughilin KR. Rational approach to evaluation and management of spontaneous perirenal hemorrhage. Surg Gynecol Obstet. 1990;170:121-5.

[24] Albi G, del Campo L, Tagarro D. Wündrelich' syndrome: causes, diagnosis and radiological management. Clin Radiol 2002;57(9):840-5.

[25] Medda M, Picozzi SC, Bozzini G, Carmignani L. Wunderlich's syndrome and hemorrhagic shock. J Emerg Trauma Shock. 2009 Sep;2(3):203-5.

Citation: **Dušanka Dobanovački, Nada Vučković, Dragan Šarac, Mišo Dukić, Milanka Tatic.** *Spontaneous Subcapsular Renal Haematoma in Adolescents: Report of Two Cases. Archives of Urology. 2018; 1(2): 10-14.*