

A Case Report of Wilms' Tumor Sang Ngoc Nguyen^{1,2}

Abstract

Introduction: Wilms' tumor is most common among under-five children with renal cancer.

Case presentation: We report the case of a 4 year-old Vietnamese boy who presented with the tumor on the right side of the abdomen with haematuria, cried at each time of urination, hypertension and moderate microcytic anaemia. The Wilms' tumor was confirmed by CT scan and histology.

Conclusion: Practitioners and patients need to be aware of the initial clinical signs if the child gets high blood pressure and haematuria. Screening for Wilm's tumor relates to child survival. Ultrasound could be done on a 3-4 months interval until the child reaches age of 8 years old is recommended in the situation of Vietnam.

Keywords: Wilms' tumor; Children

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Introduction

Nephroblastoma or Wilms' tumor is common among children with renal cancer. It accounted for 6% of all malignancies [1]. It almost always occurs in children less than five years of age - 90% of cases are diagnosed before the age of three [1, 2], the peak incidence is in the age range of 2-5 years [3]. Below is a case of a 4-year-old boy with Wilms' tumor with hypertension and moderate microcytic anaemia.

Case Presentation

A 4-year-old boy was the second child among three in his family. The child lived with both parents and his brothers in Haiphong, Vietnam. The mother of the child had an unplanned pregnancy and gave birth by caesarian section. The child was never admitted into the neonatal intensive care unit. There was no history of neonatal sepsis or jaundice. The boy was breastfed for one year. The developmental milestones were appropriate for his age. The child received full vaccines up until the current hospitalization.

The first symptom occurred in the right side of the abdomen; small in the beginning then quickly became larger and asymmetrical. Before that, haematuria with clots occurred intermittently and the child cried at each time of urination. That is reason the parents brought him to Haiphong Children's Hospital.

Physical examination

The child's skin looked normal, well-nourished and apyrexial.

Blood pressure ranged from 110/65 to 125/75 mmHg. The child's weight was 15 kilograms and his height was 100 cm. Heart sounds and lung sounds were normal. Gastrointestinal tract was normal. The child was fed well; no changes were found in bowel habits. The genitourinary tract was abnormal; the child had haematuria.

Medical history

The child was in the hospital for the first time. Wilms' tumor was diagnosed after X-ray and computed tomography (CT) scan; the child was immediately given chemotherapy to shrink the tumor before surgery.

Clinical exam

At the time of examination, the abdomen was soft and not tender. At the right-side of the abdominal wall was a mass with freely movable and smooth edges. The mass did not extend over the midline. It easily palpated above and below the mass. The problems we found were a mass at the right side of the abdomen and that the child suffered as well from hypertension. At the time of the clinical exam, we had to consider 4 potential diagnoses that we should differentiate: (1) Wilms' Tumor, (2) Neuroblastoma, (3) Polycystic kidney disease, (4) Rhabdomyosarcoma. This was confirmed by CT scan and histology.

Investigations

The CT scan showed a solid mass with cystic areas in the lower and upper quadrant arising from the right kidney. The size of

the mass was 12 cm by 9 cm; appearances were consistent with a right Wilms' tumor. Hematologic assessment showed that the child was suffering from moderate and microcytic anemia (hemoglobin concentration was 85 g/L; mean cell volume was 58.7 fL), low white blood cell counts (3.27 G/L); platelet count was normal (254 G/L). Biochemical assessment based on urea & electrolytes seemed to be normal (Sodium 140 mmol/L, Potassium 3.8 mmol/L, Urea 4.7 mmol/L, Creatinin 35 µmol/L); urinalysis was normal.

The management was right nephrectomy and blood infusion in intra or post-operative if needed. In Vietnam, antibiotic was given soon after operation. The antibiotic chosen was Ceftriaxone 500 mg in 12 hours and Metronidazole 100 mg in 8 hours for infusion.

Nephrectomy was needed for the child, using general anaesthesia. The tumor was removed. The child was sent to PICU just after operation, stayed there for 24 hours. The child was given Lactate ringer 56 ml hourly for 24 hours, Rocephin 500 mg intravenously for 12 hours, metronidazole 100 mg intravenously for 8 hours, ketamine infusion 1-2 ml per hour for pain; post-operative FBC; urea and electrolytes, strictly input and output and maintaining urine output of 10 ml per hour, providing oxygen through a mask; monitoring of vital signs was needed. The child recovered well for three days in PICU and was referred back to the urology ward. He stayed for seven days until he discharged. The child was followed up according to the doctor's request. The child seemed fine even though the histology a result was confirmed as Wilms' tumor.

Discussion

Wilm's tumor can grow for a long time without any characteristic symptoms, causing only fever, abdominal pain, nausea, or vomiting, which is the reason why it is often discovered accidentally [4]. In this case, the symptom was haematuria and

the child cried at each time of his urination. The most typical recognition of Wilms' tumor occurs when swelling starts in the abdomen, but by this point they have often grown quite large [5, 6]. It can be found earlier if the child gets ultrasound of the abdomen and confirmation by CT scan. The full medical history should be taken to find out all symptoms that may relate and how long they have existed. When the doctor thinks the child may have a tumor, ultrasound, imaging tests (x-rays, magnetic fields, or radioactive substances) are needed for differentiate diagnosis. The tests will help the doctors to define the location, type, and size of the tumor. The tests also help to explain how much spreading of the tumor may have occurred in the kidney or other parts of the body. The therapy of the treatment also relies on the tests. Again, it might prognostic the tumor after the treatment. Other test should be investigated such as hematological tests. It may be seen the child with moderate and microlytic anaemia. Blood infusion may be needed in the case with moderate anaemia before, during, after operation, just depends on the specific case. Hypertension was rare in children. If the child gets high blood pressure, it could be another sign of a kidney tumor. Monitoring the child during the hospitalization is needed. Blood and urine samples might also be collected for testing.

Wilms' tumor can also run in families, although this is rare. When the child was diagnosed as Wilms' tumors, tests can be done on parents [6-8]. Screening for Wilms' tumor is very important for children because it relates to child survival. To find kidney tumors when they are still small and have not yet spread to other organs can save their life in 4 years. Therefore, screening for Wilms' tumor is very important for the child who has syndromes, or birth defects, or a family history. A very simple and cheap way is for physical exams to be done by a specialist; ultrasound on a regular basis is recommended; it could be done on a 3- 4 months interval until the child reaches age of 8 years old [6].

References

- 1 Kaste SC, Dome JS, Babyn PS, Graf NM, Grundy P, et al. (2008) Wilms tumour: prognostic factors, staging, therapy and late effects. *Pediatr Radiol* 38: 2-17.
- 2 Greene DM (2002) Wilms' Tumor. In: Rudolph AM, Rudolph CD (eds). *Rudolph's Pediatrics*, (21st edn), McGraw-Hill Companies, New York.
- 3 Gommersall LM, Arya M, Mushtaq I, Duffy P (2006) Current challenges in Wilms' tumor management, *Nat Clin Pract Oncol* 2: 298-304.
- 4 Szymanska A, Augustyn C, Stankowski T, Walek E, Kowalski JP, et al. (2016) Wilms' Tumor With Intra-Atrial Extension: Treatment and Management. *World J Pediatr Congenit Heart Surg* 7: 116-119.
- 5 EDLIZ (2011) Essential Drug List and Standard Treatment Guidelines. The National Medicine and Therapeutics Policy Advisory Committee, NMTPAC (6thedn) Ministry of Health & Child Welfare, Republic of Zimbabwe.
- 6 Can Wilms tumor be found early?
- 7 Heitkemper DL (2006) *Medical Surgical Nursing Assessment of Clinical Problems*. (7th edn), Mosby, St Louis.
- 8 Abeloff MD, Armitage JO, Lichter AS, Niederhuber JE (2000) Pediatric Tumors. In: Abeloff MD, Armitage JO, Lichter AS, Niederhuber JE (eds). *Clinical Oncology*, (2ndedn), Churchill Livingstone, New York.