Case study

CASE REPORT ON WILM'S TUMOR IN CHILDREN

Abstract

Introduction: Wilms tumor is the most frequent kind of kidney cancer in kids. It is responsible for around 6% of all tumors in children. In children under the age of 15, the incidence is 7.6 cases per million, with 75 percent of cases occurring before the child reaches the age of five. A variant term for nephroblastoma is nephroblastoma. It is most widespread between the ages of three and four, after which it becomes much less frequent.

Clinical findings: Wilms tumor in children produces one or more of the following signs and symptoms:

• Abdominal pain

• Increasing abdominal girth

• Lack of appetite

• Fever

• Blood in the urine

• Nausea or vomiting.

• Constipation

• Shortness of breath

Diagnostic evaluation: Increase abdominal girth, pain, fever, vomiting, cried at the time of urination, hematuria, black stool, pallor, hypertension and moderate microcytic anemia (Iron deficiency).

Ultrasonography: Splenomegaly

Therapeutic investigation: X- ray of abdomen and chest, IVP, USG, MRI, CT scan, renal function test and urine analysis, liver function test bone marrow study, and histology

Outcome: After treatment, the child shows great improvement, his fever, abdominal pain, blood in urine is minimized and his Hb level is increased from 9gm% to 11.1gm%.

Conclusion: A female child of 11 years from admitted to pediatric ward no .22, AVBRH on 28/9/2020 with a rare case of Wilms tumor. She is 30kg and his height is 142cm. She was admitted to the hospital, where all investigations and treatments began. She improved dramatically after therapy and continued to do so until my last day of care.

Key words: Wilms tumor, Children.

Introduction

Wilms tumor is a kind of kidney cancer that predominantly affects youngsters. It's also known as nephroblastoma. Wilms tumor is a malignant renal tumor that is the most frequent kidney neoplasm in children. It is responsible for around 6% of all tumors in children. For children under the age of 15, the incidence is 7.6 cases per million, with 75 percent of cases occurring before the child reaches the age of five.

The condition is usually unilateral, although in 5% to 10% of cases, both kidneys are affected. Nephroblastoma is another name for it. It is most frequent between the ages of three and four, and it becomes considerably less prevalent after that.[1]

Wilms tumor usually affects only one kidney. but it may also affect both kidneys at the same time. this tumor develops within the kidney parenchyma, destroying it and invading the surrounding tissue. the tumor trends to grow in a concentric fission invading adherent renal parentarenchyma. characteristically a well develop capsule is present. Hemorrhage, necrosis and calcification may occur rarely. metastatic spared occur by lymphatic to the renal hilar, preaortic and perianal lymph nodes. distinct blood borne metastasis occur most frequently in the lungs, bone and liver. Wilms tumor is a rapidly developing embryonal tumor usually diagnosed within 3years of age. It is generally unilateral and can be familial in some cases. It may be associated with other congenital irregularities, like hemihypertrophy, Genito-urinary anomalies, aniridia, ambiguous genitalia, etc. Advances in Wilms tumor detection and therapy have greatly improved the prognosis (prognosis) for children with this disease throughout the years. If given the proper care, most children with Wilms tumor have a very good prognosis.[2]

Management of Wilms tumor depends upon histological finding, clinical staging and metastatic.

Stage I: Wilms tumor with favorable histology is usually manage with nephrectomy and chemotherapy for 18 weeks. Stage II, III, IV, V tumors are treated with nephrectomy, abdominal radiotherapy and chemotherapy for 24 weeks. Pre-operative radio therapy and chemotherapy are indicated in massive tumor. Vincristine, dactinomycin, actinomycin, Adriamycin, doxorubicin, and

cyclophosphamide are commonly used in chemotherapy. Children under the age of one year are not administered radiation.[3]

Nursing management should include special care during nephrectomy, radiotherapy, chemotherapy. reducing anxiety of parents, by explanation, involvement in child care and teaching long-term home-based care are important nursing intervention to help family to cope with the situation.

Cells with rhabdomeric differentiation or malignancy (rhabdomyosarcomata's Wilms) may be found in the mesenchymal component. Wilms' tumors can be classified into two prognostic categories based on pathologic characteristics.

A family member or healthcare provider will discover an asymptomatic abdominal lump in the majority of Wilms' tumor patients. Renal tumours can also be detected by routine screening in children who have clinical features that make them more susceptible to the illness.[4]

Case Presentation

Patients Identification: A female child of 11 years from admitted to pediatric ward no .22, AVBRH on 28/9/2020 with a rare case of Wilms tumor. She is 30kg and his height is 142cm.

Present medical history: A female child of 11 yrs. old was brought to AVBRH on by his parents with a complaint of abdomen pain and fever and he was admitted to pediatric ward. He is a known case of Wilms tumor and his Hb level 9 gm% at the time of admission. The child was weak and inactive on admission.

Past medical history: My patient was diagnosed as Wilms tumor at when she was admitted to hospital due to fever, vomiting, black stool till then, he was admitted to hospital. She does not any past history of any disease condition.

Family history: There are 4 members in his family. All others members of the family were not having any complaints in their health. In his family no other member is having any problem of hypertension, diabetes, or any other disease condition.

Past investigation and Outcome: A female child of 11 years from admitted to pediatric ward no .22, AVBRH on 28/9/2020 with a rare case of Wilms tumor. She is 30kg and his height is 142cm.She was admitted in hospital and all investigation and treatment were started. After getting treatment, she shows great improvement and the treatment was still going on till my last date of care.

Clinical findings: Abdominal pain, fever, Hb (9 gm%), Abdomen swelling, Blood in the urine, increase abdominal girth, hematuria, cried at each time of urination, black stool.

- **Etiology:** The cause of Wilms tumor is unknown. Heredity may play a role in some cases.
- A genetic error that causes Wilms tumor and is passed on from parents to children.
- Wilms tumor can cause a number of abnormalities in children.
- The renal parenchyma is generally expanded by the tumor, causing the kidney capsule to stretch across the tumor's surface, which is encapsulated at the time of surgery.[5]

Physical examination: There is not much abnormality found in head to foot examination, the child is lean and thin and having dull look and not active. He is weak and not cooperative. Though it is found that the child is having splenomegaly from ultrasonography.

Diagnostic assessment: Hb%-9gm%, RBC-3.5millions/cu.mm, WBC-3900/cu.mm, platelets-1.57lacs/cu.mm, MCV-76.7n, MCH25.7pico-gm, MCHC-33.6%, Monocytes-03%, Granulocytes-75%, Lymphocytes-20%, Eosinocytes-02%, Biasophiles-00%.

Therapeutic Intervention: Tab.septran 160mg OD, Tab Emset 4mg SOS, Tab Pan 40mg OD, Tab Limcee 500mg OD, Tab Acent 400mg SOS, syp. Zincovit 5ml BD, syp Becol 5ml BD.

Discussion:

A female child of 11 years from admitted to pediatric ward no .22, AVBRH on 28/9/2020 with a rare case of Wilms tumor. She is 30kg and his height is 142cm.She was admitted in hospital and all investigation and treatment were started. After getting treatment, she shows great improvement and the treatment was still going on till my last date of care. Surgical excision of the original tumor is the cornerstone of therapy. As a result, the tumor's dispersion is carefully staged and quantified.[6] To further relieve tumor burden, patients with massive tumors or risky intravascular expansion may undergo radiation or chemotherapy prior to surgery. Wilms tumor has one of the best overall survival rates for all childhood cancers, with a four-year survival rate of 95%. Bowel blockage, liver damage, nephritis, newborn sterility, interstitial pneumonia, and scoliosis are all possible side effects of radiation therapy. To minimize the risk of metastasis, avoid indiscriminate manipulation of the abdomen both before and after surgery. Since

the tumor is soft and vascular, prolonged palpation or handling of the child's abdomen can cause seeding. There is nothing you or your kid can do to avoid Wilms' tumors.[7]

The doctor may prescribe periodic renal ultrasounds to check for renal abnormalities if your child has risk factors for Wilms' tumors (such as recognized related disorders). Although this screening cannot prevent Wilms' tumors, it can aid in the early detection of the illness.

In this post, we review our Wilms tumour care experience over the last 15 years. The prognosis for nephroblastoma is excellent, and the current goal is to accomplish a cure with little damage while maintaining appropriate renal function. Wilms tumor is diagnosed based on clinical and radiological symptoms, and treatment is initiated without the necessity for a histological examination. Only three patients in our series required a biopsy prior to initiating therapy, and all three were diagnosed with Wilms tumour. Preoperative chemotherapy frequently results in a reduction in tumour size, making surgery easier and less hazardous. In our investigation, we discovered that preoperative therapy reduced tumour size by 250mL in 90% of patients with minimal side effects; four patients did not react to the treatment.[8]

Patients with Wilms tumors must be monitored for the rest of their lives since they generally only have one kidney and are at danger of acquiring side effects or second malignancies as a result of their therapies (the chance of a second malignant neoplasm is 5–7% after 30 years). Because Wilms tumor patients only have one functioning kidney. Due to nephrotoxicity from chemotherapy and glomerular hyperfiltration in the nephrons remaining after surgery, they are at risk

of renal failure. Within 20 years following diagnosis, Patients with early-stage sickness had a 0.6 percent probability of having terminal renal failure.[9]

Wilms' tumor is an uncommon kind of kidney cancer that affects mostly youngsters. In the United States, one out of every 10,000 children have Wilms' tumor. Every year, about 500 youngsters are diagnosed with cancer for the first time. Wilms' tumour is the most frequent kind of kidney cancer in children and the fourth most common cancer in children overall, despite its rarity. Cancer occurs when abnormal cells in your body multiply uncontrollably. Although cancer can strike at any age, certain malignancies are only found in children. Wilms' tumor, also known as nephroblastoma, is one such cancer. Wilms' tumor is generally detected when a kid is three years old. It's rare after the age of six, although it can happen in older children and adults.[10]

CONCLUSION

Wilms tumor is a genetic condition in children; it is important to detect it at an early stage so that the child may not cause complications. Wilms tumor is an uncommon kind of kidney cancer that mostly affects youngsters, but it's also necessary to take precautions. The alternative word for it is nephroblastoma. Wilms tumor, a malignant renal tumor, is the most frequent kidney neoplasm in children. It accounts for around 6% of all childhood tumors. In youngsters under the age of 15, the frequency is 7.6 cases per million. With 75 percent of cases occurring before the age of five. While the condition is normally unilateral, it affects both kidneys in 5% to 10% of instances. It's sometimes referred to as nephroblastoma. It is most common between the ages of three and four, and it becomes much less common after that.

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