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Case Report

Giant Abdominal Neuroblastoma in 6 Months Old Baby

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Abstract

Background: Abdominal tumor is one of the most challenge pathology in pediatric surgery.

The pediatric surgeon must deal with clinical cases where the size of the tumor or its penetration into neighboring anatomical structures should be well clinically evaluated before intervention. Caution should be exercised especially in avoiding inferior timing and timing of inferior vena cava where the latter is infiltrated.

Case presentation: 6 months old baby is consulted by our team. From several days, parents has palpated a big mass in abdomen. CT scan shows a very big mass, 7 x 7 cm, which is in close relation with the right kidney. Vena cava is infiltrated by the tumor. Treatment plan was at least excisional biopsy, or total resections of the tumor.

Operation: Right side transversal laparotomy extended on the left side. Very big mass which is located on hilum of right kidney but without infiltrated kidney. Mass has infiltrate Vena cava. Right renal vein was infiltrated. The mass is dissected free from all the part. Part of wall of VC is resected. The right venal vein is occluded from the mass and part of dissection. The viability of the right kidney is preserved from collateral vascularity.

Conclusions: In big abdominal tumor when vena cava is infiltrated, several imported principle mast kept in mind when undertaking vena cava resection. Resection of inferior vena cava can be done safely, because an extensive collateral venous supply will have developed in most cases. With right-sided kidney tumors, resection of the suprarenal vena cava is also possible provided the left renal vein is ligated distal to the gonadal and adrenal tributaries, which then provided collateral venous drainage from the left kidney.

Keywords: Neuroblastoma; Laparotomy; Vena Cava

Introduction

Abdominal tumor is one of the most challenge pathology in pediatric surgery. Pediatric surgeon is the corner stone of treatment for these pathologies. The pediatric surgeon must deal with clinical cases where the size of the tumor or its penetration into neighboring anatomical structures should be well clinically evaluated before intervention. Caution should be exercised especially in avoiding inferior timing and timing of inferior vena cava where the latter is infiltrated.

Case presentation

Patients information

A six months old baby is consulted by our team. From several days, parents have palpated a big mass in abdomen. No medical, family and psycho-social history including relevant genetic information. No medical history for relevant past interventions with outcomes.

Clinical findings

Abdominal mass increased during clinical examination, which was of moderate hardness at palpation. Palpation did not give the patient pain.

Diagnostic assessment

CT scan shows a very big mass, 7 x 7 cm, which is in close relation with the right kidney (Figure 1). Vena cava is infiltrated by the tumor.

The pediatric oncologist asked for the surgery consult. After the consult, it was decided to operate the baby. Treatment plan was at least excisional biopsy, or total resections of the tumor.

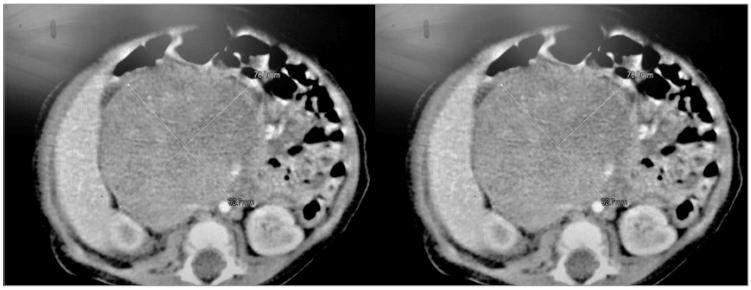

Figure 1: CT scan shows a very big mass and vena cava is infiltrated.

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Therapeutic Intervention

Right side transversal laparotomy extended on the left side. Very big mass which is located on hilum of right kidney but without infiltrated kidney. Mass has infiltrate Vena cava. Vena cava is isolated beneath and above the mass. Right renal vein was infiltrated. The mass is dissected free from all the part. Part of wall of VC is resected. The right venal vein is occluded from the mass and part of dissection. The viability of the right kidney is preserved from collateral vascularity. The VC is occluded from the mass, so the collateral vascularity has been already presented. Total resection of the mass has been performed (figure 2).

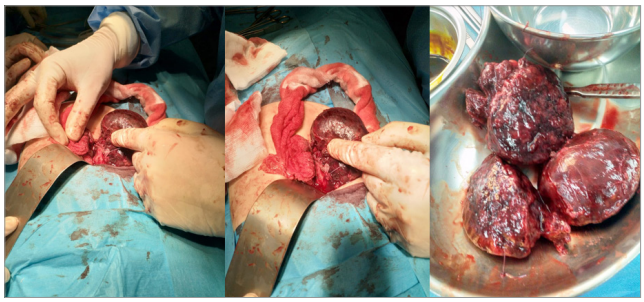

Figure 2: The operation stages are shown in this figure.

Follow-up and outcomes

Biopsy shows all the signs of non-differentiated neuroblastoma.

Discussion

The "International Neuroblastoma Staging System" (INSS) established in 1986 and revised in 1988 stratifies neuroblastoma according to its anatomical presence at diagnosis: [1,2,3]

Stage 1: Localized tumor confined to the area of origin.

Stage 2A: Unilateral tumor with incomplete gross resection; identifiable ipsilateral and contralateral lymph node negative for tumor.

Stage 2B: Unilateral tumor with complete or incomplete gross resection; with ipsilateral lymph node positive for tumor; identifiable contralateral lymph node negative for tumor.

Stage 3: Tumor infiltrating across midline with or without regional lymph node involvement; or unilateral tumor with contralateral lymph node involvement; or midline tumor with bilateral lymph node involvement.

Stage 4: Dissemination of tumor to distant lymph nodes, bone marrow, bone, liver, or other organs except as defined by Stage 4S.

Stage 4S: Age <1 year old with localized primary tumor as defined in Stage 1 or 2, with dissemination limited to liver, skin, or bone marrow (less than 10 percent of nucleated bone marrow cells are tumors).

Neuroblastoma is sometimes caused by a gene mutation (change) passed from the parent to the child.

Patients Perspective

In big abdominal tumor when vena cava is infiltrated, several imported principle mast kept in mind when undertaking vena cava resection.

Resection of inferior vena cava can be done safely, because an extensive collateral venous supply will have developed in most cases.

Conclusions

With right-sided kidney tumors, resection of the suprarenal vena cava is also possible provided the left renal vein is ligated distal to the gonadal and adrenal tributaries, which then provided collateral venous drainage from the left kidney.

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