



Case Report on Sacrococcygeal (Teratomas) Germ Cell Tumor

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Sacrococcygeal teratomas are a type of germ cell tumour (GCTs) accounting for 40% of all GCTs of all GCTs in children. Interestingly 75% occurs in females. Reporting here a case of 3 years old female baby hospitalized for surgical excision of sacrococcygeal teratoma. A female (3-year-old) patient was referred to the pediatric outpatient department at Acharya Vinoba Bhave Rural Hospital Wardha on 19th May 2021. Complaining of swelling on right gluteal region Since 6 month and swelling is increases day by day, pain in back side, fever (Temperature - 101°F) and tenderness in back side, leg weakness, constipation and she was admitted to Pediatric ward. Surgical excision of sacrococcygeal teratoma was done during her hospitalization. She received one cycle of chemotherapy with antineoplastic medicines. The client discharged after 10 days stay in hospital.

Keywords: *Chemotherapy; germ cell tumor; sacrococcygeal teratomas.*

1. INTRODUCTION

In females the germ cells create eggs (ova's) and in men the sperm. These immature cells consist of germ cell cancers. Germ cell cancers are uncommon. Cancer (malignant) or cancer may not occur (benign) [1]. They are composed of a wide range of neoplasms all derived from primordial germ cells. Even though all have the same etiology, pathology and clinical presentation differ from each other. This kind of tumor is not frequent for children, and only 4% of childhood cancer is present [2]. Teratomas, germinomas, tumor of a sinus, and yolk sac tumors are the most frequent forms of GCT (YSTs) choriocarcinoma and carcinoma of the embryos [3].

Pediatric germ cell tumor is a phrase used in children between 0-18 years of age to indicate malignant tumors of the germ line cells. These malignancies may occur in testis, ovary, or the locations of the extra gonad and in the sacrococcygeal region, including mediastinum. In both children and young adults, germ cell (GCT) cancers are also seen in the brain. While intracranial GCTs (iGCTs) are histologically comparable to the extra-cranium GCTs, it is not known if tumor develop by similar or distinct mechanics at the different locations and therapeutic methods are different [4]. It is not entirely understood which cause germ cell cancers are. Some genetic abnormalities transmitted to children from parents may raise the risk of germ cell cancers. Some genetic disorders can induce aberrant reproductive system development in men and women. The risk of germ cell cancers in testicles for boys born with undescended testicles (cryptorchidism) is thought to be increased [5].

Approximately three to four percent of all malignancies in children are malignant germ cell tumor [6]. In infancy and youth, the sacrococcygeal area is the most prevalent extra gonadal location of germ cell malignancies [7]. The majority of sacrococcygeal germ cell tumor in infantile are mature and immature, but in children after the neonatal stage, the yolk sac tumor is the most prevalent form of histology, complete excision of mature teratomas and low-grade immature teratomas is generally treated. However, after sacrococcygeal teratoma excision malignant germ cell tumors may return in the same place. In certain Asian nations, including Taiwan, germ cell cancers were observed to be particularly high compared to the USA, Australia, China and Japan [8].

After the neonatal period, sacrococcygeal germ-cell cancers can generally form before the age of 3 years. They tend to occur as discomfort on sitting, buttock asymmetry or bladder, bowel or lower limb dysfunction, different from an outside palpable mass in newborns. They have malignant components more frequently [9]. Early surgical resection with full coccyx excision, followed by the serial serum AFP measurements, ensures physiological normalization in the AFP level and allow early identification of tumor recurrence is the primary therapy of mature neonatal sacrococcygeal teratomas [10]. For cancers not responding to chemotherapy, targeted therapies are examined, including immunotherapy, hormone therapy and kinaasis inhibitors [11].

2. PRESENTATION OF CASE

A female (3-year-old) patient was referred to the pediatric outpatient department at Acharya Vinoba Bhave Rural Hospital Wardha on 19th May 2021. Complaining of swelling on right gluteal region Since 6 month and swelling is increases day by day, pain in back side, fever (Temperature - 101°F) and tenderness in back side, leg weakness, constipation and she was admitted to Pediatric ward no. 1, She is 10 kg weight and her height is 92 cm.and her Hemoglobin level at the time of admission was 10.6gm%. The child is weak and inactive on admission.

On general examination, the patient has been losing weight approximately 10 kg and there is not much abnormality found in head to toe examination, the child is lean and thin and having dull look. She is weak and not so cooperative. Though it is found that the child is having swelling on right-side of gluteal region. The past medical history of my patient she have swelling on right side in gluteal region, light pain and tenseness. She received general treatment in private hospital in Yavatmal and after that she was referred to Acharya vinoba Bhave Ruaral Hospital, Sawangi Meghe. She was admitted to hospital due to increase swelling and fever. All other members of the family were not having complaints in their health except for my patient who was being admitted in the hospital.

2.1 Ultrasonography

Multilocular presacral cystic lesion measures 8 x 5.6cm extended up to right gluteal region. It describes as sacrococcygeal teratomas or lymphatic malformation.

Table 1. Diagnostic assessment

Sr. No.	Investigation	Patient value	Normal value	Inference
1.	Hb	10.6gm%	11-14gm%	Decreased
2.	Total RBC count	5.04millions/cu.mm	4-5.2million/cu.mm	Normal
3.	RDW	17.8%	11.6-14%	Increased
4.	HCT	31.9%	34-40%	Decreased
5.	Total WBC count	11600/cu.mm	5000-15000cu.mm	Increased
6.	Monocytes	04%	2-10%	Normal
7.	Granulocytes	30%	15-80%	Normal
8.	Lymphocytes	64%	60-90%	Normal
9.	Total platelet count	3.43lacs/cu.mm	2-4.9lacs/cu.mm	Normal
10	Peripheral Smear: RBCs –	Predominantly microcytic mildly hypochmic with mild anisopoikilocytosis showing few pencil cells.. Platelets – adequate on smear. No haemoparasite seen.		

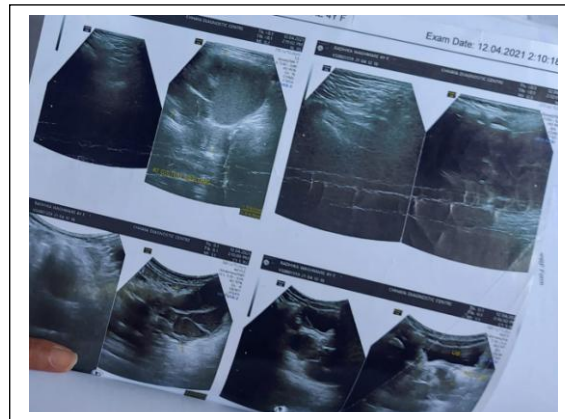


Fig. 1. Diagnostic reports

2.2 CT Report

There is well defined multi-loculated complex cystic lesion in presacral region in right side, the lesion measures 5.3 x 5.6 x 9cm in size, it thickness average 1-2mm. the features suggested that possibility of sacrococcygeal teratomas or tail gut duplication cyst or anterior sacral meningocele.

2.3 MRI Report

There is complex multi-septated cystic lesion in sacro-coccygeal region. It thickness measuring 3-4mm and possible differentiate view of increase alpha feto-protein. It describes as the germ cell tumor in sacrococcygeal (teratoma).

2.4 Histopathology Report

1. Content of coccyx received single, irregular, yellowish brown tissue piece measuring 0.8 x 0.5 x 0.5 cm kept for decalcification. 2. Content of

excision of tumor mass single, irregular, yellowish brown tissue piece with skin attached in some place measuring overall specimen measuring 8 x 7.5 x 4.5 cm and overall skin measuring 3.7 x 2.3 x 0.2 cm.

2.5 Chemotherapy

The child was received 1cycle of chemotherapy anti-neoplastic drugs (Inj. Cisplatin 10mg in 100ml drip) and (Etoposide 150mg) from 28th May to 1st June 2021.

2.6 Nursing Diagnosis and Care

Patient was nursed in prone and lateral position. She was transferred to Peadiatric intensive care unit after surgery on the day of surgery. The PICU stay was uneventful. She was allowed to take soft diet on the next day of surgery. Food was tolerated by her, there was no nausea vomiting, her vital sign was stable and so shifted was after 2days of PICU stay.

Table 2. Therapeutic Intervention

Sr. NO.	Name of drug	Dose	Route	Frequency	Action
1.	Inj. Ceftriaxone	500mg	IV	BD	Antibiotic
2.	Inj. Amikacin	150mg	IV	OD	Antibiotic
3.	Inj. Vancomycin	200mg	IV	QID	Antibiotic
4.	Inj. Metro	100mg	IV	TDS	Antibiotic
5.	Inj. Pantop	40mg	IV	OD	Antacid
6.	Syp. Augmentin	8ml	Orally	BD	Antibiotic
7.	Syp. Rinifol- Z	5ml	Orally	BD	Multivitamin

Table 3. Chart of nursing diagnosis and care

Nursing diagnosis	Nursing care
Preoperative problem Risk for impaired skin integrity	<ul style="list-style-type: none"> • Position in lateral or prone position • Change position frequently • Provide meticulous skin and backcare • Massage skin periodically to stimulate blood circulation with special attention to bony prominences
Risk for injury or infection to sac	<ul style="list-style-type: none"> • Avoid positioning on back • Prevent contamination of mass • Careful handling while giving care • While on side lying position keep a pillow behind back to prevent sudden rolling of patient on the back.
Postoperative problem Ineffective Thermoregulation following surgery	<ul style="list-style-type: none"> • Frequently monitor vital signs • Place child in an warmer to prevent temperature fluctuation • Avoid exposing patient unnecessarily. • Maintain thermoneutral environment
Risk for infection	<ul style="list-style-type: none"> • Keep surgical site clean and dry • Observe for bleeding, drainage at site surgery. • Nurse in prone of lateral position • Dressing done using aseptic technique • Administer antibiotics • Avoid surgical site soiling with urine and feces
Impaired nutrition less than body requirement	<ul style="list-style-type: none"> • Administer IV fluids as ordered • Maintain intake and output chart • Begin oral feeding as soon as child. starts tolerating the feeds • Feed child in side lying fowlers position • Baby can be held gently as soon assurgical area is sufficiently healed • add vit c,Vitamin B in diet. • Serve in attractive way. • Consider the likes and dislikes of the child.
Pain	<ul style="list-style-type: none"> • Assess the pain score. • Give comfortable position • Provide diversion therapy. • Administer round the clock analgesic as per Doctor's prescription.

3. DISCUSSION

The cause of germ cell tumors isn't completely understood, some investigators have shown that it comes from abnormal germ cell migration during embryogenesis. Others assume that during normal embryogenesis the sprayed germ cells are widely distributed to various locations, giving genetics information or regulatory roles at somatic sites. Extra gonadal GCTs were once considered to be isolated primary tumor metastases within the gonad, but today many of these are congenital germ cell tumors that originate outside the gonad. Sacrococcygeal teratomas, the most commonly diagnosed tumor of infants, is the most remarkable of all. [12]. 15–20 percent of all previous mediastinal tumors are GCTs, of which about 50% are benign teratomas [13]. Anti-NMDA receptor encephalitis might be linked with ovarian teratomas [14].

A female child admitted in AVBRH on 19th May 2021 in pediatric ward no 14 with chief complaint of swelling on right gluteal region Since 6 month and swelling is increases day by day, pain in back side, fever and tenderness in back side, leg weakness, constipation As soon as she was admitted to hospital investigations were done and appropriate treatment were started. After getting treatment, she shows great improvement and the treatment was still going on till my last date of care. She received one cycle of chemotherapy with antineoplastic agents.

3.1 Nursing Responsibility in Chemotherapy

Assess the patient condition and check vital signs, goal of therapy, drug dose, route, schedule, administration principal and nurse have knowledge about handling of chemotherapy drug. Provide information about side effect of drugs and also give psychological support to client and family member. Check the name of anti-neoplastic drug, route and dose and expiry date. Antiemetic administration one hrs prior to chemotherapy. Maintain fluid intake and hydration status, monitor any complication after giving chemotherapy and documenting. Record and reporting.

Hou et al - 81 children in Taiwan were examined for extra cranial germ cell cancers. The main idea of therapy was complete surgical excision where practicable, followed by adjuvant chemotherapy. An initial biopsy was conducted for individuals with unresectable tumors during

diagnosis. They have had neoadjuvant chemotherapy and have been operated on in seconds. The overall survival for the entire group for ten years and event-free survival was 95% and 88%, respectively [15].

Kim et al - 66 Korean kids with extra cranial germ cell tumors reported treatment results. The overall survival and event-free survival rates over five years were 92 and 90%. Six per cent of the extra cranial malignant germ cell tumors (MSGCT's) have occurred in both studies. Limited data on children in these nations with MSGCTs prompted us to undertake this study in a single medical center in Taiwan to examine the data on children with MSGCTs.

3.2 Final Diagnosis

After undergone all investigation and examination patient diagnoses as Sacrococcygeal (teratomas) germ cell tumor.

4. CONCLUSION

There appears to be a worse prognosis and a worse survival rate of the children with extra-gonadal GCT and high AFP; but a more potent studies should be conducted, with more patients from different pediatric surgical facilities, to make a strong conclusion. Combining operations with chemotherapy can lead to a better prediction. Early diagnosis is highly crucial in order to prevent the kid from developing illness problems. My patient show great improvement after getting the treatment and the treatment was still going on till my last date of care.

CONSENT

The investigators state that all applicable parent's consent documents have been received. The consented to record her photos and other clinical material in the article in this manner. The patients recognize that they would not publish their names or identities and make fair attempts to hide their identity, but no anonymity can be assured.

ETHICAL APPROVAL

This information was obtained from the institution's ethics committee.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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