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Case Study

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CASE OF SPINAL NEUROFIBROMA (SCHWANNOMA) IN PREGNANCY AT 36WEEKS

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ABSTRACT

Neurofibromas are the tumors of the nerve sheath or the layer of insulation that surrounds the nerve fibers. They arise from Schwann cells which produce the insulating sheath for all nerves outside the brain and spinal cord. Spinal neurofibromas are benign and slow growing. Surgery is the treatment of choicefor symptomatic lesions. 5 to 10 percent of neurofibromas undergo malignant change which is indicated by rapid growth. The differential diagnosis include the spinal schwannoma and spinal meningioma. Neurofibromatosis type 1 is one of the most commongenetic diseases following an autosomal dominant inheritance pattern. Neurofibromas have been noted to increase in size and number in up to 82 percent of pregnancies. This is due to the proliferative effect of estradiol (E2)and progesterone in tumor expressive hormone tumors.

KEYWORDS: Pregnancy, Schwannoma, Estrogen, NeurofIbroma.

INTRODUCTION

I am presenting a case of a third gravida with a spinal neurofibroma in the dorsal spine, detected at 36 weeks gestation, with loss of bladder and bowel control with paraparesis. First a cesarean section and then the spinal surgerywas performed on day 5 of cesarean section. The baby was healthy and fine and she did well past surgery with regular physiotherapy. Now she can walkon her own and has complete control over the bladder and bowel.

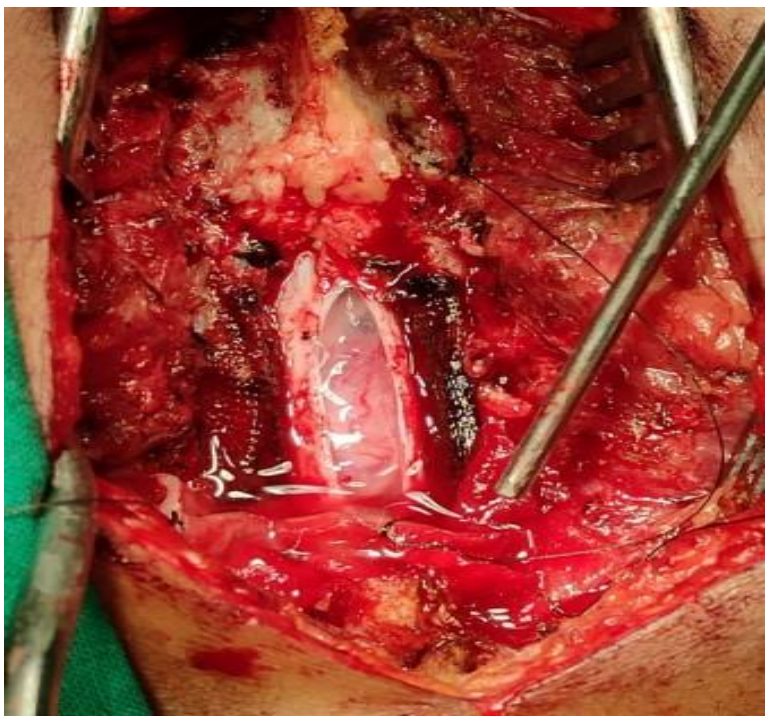

Figure 1 Spinal Neurofibroma.

CASE REPORT

A 28 year old lady came to the hospital all the way from a remote village in Uttar pradesh with a 36 weeks pregnancy with weakness in both lower limbs which was gradually progressing from 3 weeks to the stage where she was unable to stand and walk completely. She had burning pain in both the lower limbs sometimes. She was a third gravida with previous two vaginal deliveries. She had lost controlover her bladder and bowel function and was catheterized already at some hospital in her place.

There was no history of fever, any injury to spine or fall.

She was thin built, pale, normotensive without any medical disorders. Her cardiovascular and respiratory system examination was normal. Neurologicexamination showed severe spastic paraparesis and impairment of all modalities below T3 level.

Abdominal examination showed a gravid uterus 36 weeks with cephalicpresentation with normal growth and fetal heart rate.

Hematological investigations were normal.

A multi disciplinary treatment was decided for her which included Obstetrician, anaesthesiologist, Neurosurgeon and neonatologist. As suggested by the Neurosurgeon the MRI dorsal spine was done. It was suggestive of Intradural Extramedullary lesion with differential diagnosis of Meningioma or Nerve sheath tumor. The lesion was 2cm by 1cm in the intradural space.

She was given corticosteroids for fetal lung maturity as she was not sure of her last menstrual period and had done only one ultrasound at 26 weeks. A cesarean section was planned after 48 hours under general anesthesia and a near term malechild of 2.5 kg delivered. Intraoperative and postoperative periods were uneventful.

On day 5 of the cesarean section her spinal surgery for dorsal IDEM was planned. The Tumor was excised completely. D1 to D3 laminectomy was performed with excision of a well encapsulated vascular lesion adhered to oneof the roots. Complete excision was done and the mass was sent for histopathology. The histopathology was suggestive of a nerve sheath tumor. From a posterolateral approach, the tumor was excised completely. Her postoperative period was uneventful. A few days after surgery gradual but significant improvement of sensation in the lower limbs and bowel control was achieved. There was grade 4 muscle strength in both lower limbs. Intense physiotherapy was started. Bladder catheter was removed after 7 days. She wasable to pass urine comfortably after that. The pathological diagnosis was Schwannoma. After 6 months of follow up the lady was absolutely fine and had full control over bladder and bowel. She was able towalk on her own.

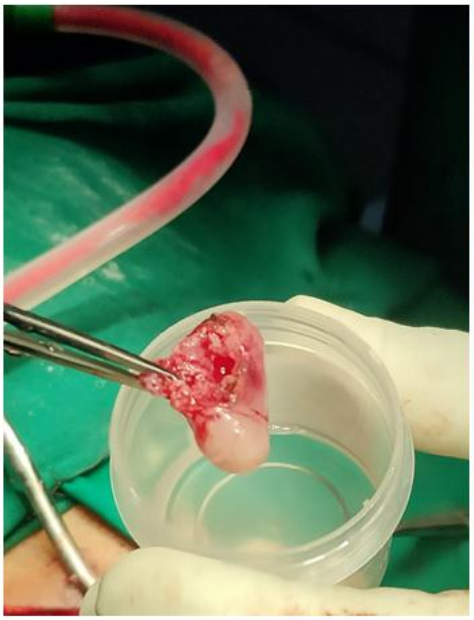

FIGURE 2

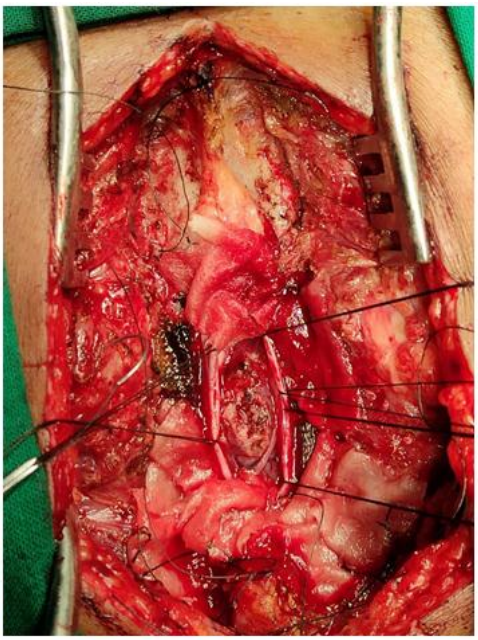

FIGURE 3

DISCUSSION

Some tumors of the central nervous system become evident during pregnancy.

Sodium and water retention cause the tumors to increase in size causing compression effects. Immunosuppression causes decrease in tolerance to tumor growth cells. Increases in steroids like progesterone and estrogen have been considered a relevant growth factor in hormone dependent tumors.[5] The onset of spinal tumors during pregnancy has been reported and investigated only rarely. Some common signs of pregnancy like fatigue,

weakness, bladder discomfort, ligament strain, lumbosacral nerve irritation may mimic early signs of spinal cord compression. As a consequence, spinal tumors presenting during pregnancy can be easily misdiagnosed. The reason for rapid changes in patient symptoms may be due to increased weight bearing as the spine is under significant pressure during pregnancy. There is increased expression of progesterone and glucocorticoid receptors in schwannoma cells in pregnancy. As the levels of progesterone and glucocorticoids fluctuate in pregnancy, it stimulates tumor growth and aggravates the symptoms. There is increased vascularity and oedema of the tissues, hence the tumors grow in size.[6] One reason is oncofetal antigens, these are the fetal antigens analogous to the antigens present on the tumor cells. The immune evasion of these antigens might result in enhanced tumor growth in pregnancy.[2,3]

Women with spinal cord lesions may deliver unattended.[4]

A multidisciplinary team approach is essential in managing these cases. The MDT group should include obstetrician, Neurosurgeon, Anaesthesiologist, neonatologist. The use of operating microscopes ensured complete tumor resection without damaging the spinal cord. So a high index of suspicion is needed for patients with progressive back pain during pregnancy.

CONCLUSION

Symptoms of backache and weakness in lower limbs are common in pregnancy because of weight bearing by the spine, lordosis, and relaxation of pelvic joints. So if there is a high index of suspicion the spinal cord lesions can be identified and treated promptly. A multidisciplinary approach is a must. Immunohistochemical analysis can be done which can prove that estrogen might be the cause of worsening of symptoms.

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