

Pregnancy in Pott's Disease: A Case Report and Review

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Abstract:

Spinal tuberculosis (Pott's disease) during pregnancy reported to be rare & can be associated with destruction of the intervertebral disc & adjacent vertebrae that can lead to cord compression & thereby paraplegia or quadriplegia. Delay in diagnosis is common & most cases are diagnosed when paraplegia has already been occurred. This serious complication requires special attention during pregnancy & delivery. Here we reported a case of term pregnancy with Pott's paraplegia. As the patient had complete motor & sensory loss from D7 level, (above the level of umbilicus to the lower limbs) LUCS was done without anesthesia & a healthy female baby was delivered. She did not require any analgesia post operatively.

Keywords: Pott's disease, spinal tuberculosis, paraplegia, pregnancy, low back pain

Introduction:

Pott's disease is a presentation of extra pulmonary tuberculosis (TB) that affects the spine, a kind of tubercular arthritis of the intervertebral joints. It is named after Percivall Pott (1714-1788), a London surgeon¹. Scientifically, it is called tuberculous spondylitis & it is most commonly localized in the lower thoracic & upper lumbar vertebrae & intervertebral discs². Pott's disease results from haematogenous spread of tuberculosis from other sites, usually pulmonary. The infection then spreads from two adjacent vertebrae into intervertebral discs along with surrounding structures leading to para vertebral abscess formation.³ The disease affects males more than females.. In the USA, it affects mostly adults but in countries where it is commonest, it affects mostly children.^{4, 5}

Symptoms of the spinal TB are gradually onset together with systemic features of TB. There is usually localized back pain which is made worse on weight bearing, coughing, sneezing, movement etc. There may be kyphosis or paravertebral swelling or a psoas abscess may present as a lump in the groin & resembles a hernia. If there is neural involvement there will be neurological sign like weakness, paraplegia or quadriplegia.⁶

A comparison study of Dr. Cleveland showed that in 'non paralytic group' the most often areas involved

was from ninth thoracic to second lumbar vertebrae. In 'paralytic group' the areas frequently involved were 5th to 9th thoracic vertebrae, because the spinal canal is smallest at this level. Therefore, the products of inflammation would cause maximum pressure on the cord at this level.⁷

The symptoms of Pott's paraplegia become apparent when there is interference with the conductivity of the spinal cord by inflammatory process resulting in edema of the cord, pressure of granulation tissue, tension abscess or tuberculous patchy meningitis. The pressure is directly over the anterolateral columns, so that motion affected earlier than is sensation.⁸

In early onset paraplegia, the signs appear early, usually during the first two years of the disease. The palsy is usually more complete than the late-onset type. The symptoms are caused by inflammation, edema or abscess formation. Therefore, rapid & complete recovery usually follows efficient recumbency treatment. Paraplegia of this type is common & requires no surgery for relief, unless, it progresses while under conservative treatment.

Late onset paraplegia occurs from two to many years after the onset of the spine lesion. The paralysis is often incomplete, selective & progressive. Girdle pains may be the first complaint, although loss of coordination in the lower extremities may be the initial

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symptom. The tendon reflexes are hyperactive. Loss of sensation & loss of sphincter control appear late in the progress of the disease & may be patchy. The condition of the patient becomes rapidly worse & there is danger of permanent paraplegia. The prognosis is then grave. Surgical intervention should be contemplated before the paraplegia has progressed to this stage^{9, 10}

Patient with Pott's paraplegia should not be allowed to remain in a paraplegic state indefinitely. When conservative treatment of three to four months duration fails to give signs of recovery, surgical indications should be sought & route to follow should be determined. Drainage of psoas, lumbar, or mediastinal abscess by aspiration or incision should be performed to relieve spinal cord pressure.^{11, 12}

Case report

A 22 years old lady (G2P0A1) admitted in RMCH, Rajshahi, at 35 weeks of pregnancy with the complaints of unable to walk, loss of sensation of both lower limbs & urinary incontinence for two weeks. She was relatively well up to 22 weeks of pregnancy. Thereafter she noticed mid back pain which was localized & aggravated by movement. She was treated by a local doctor but the pain was not improved. One and half months later she developed weakness & numbness of both lower limbs & finally patient became completely bed ridden. She also developed urinary incontinence which required an in-dwelling catheter. In this period she had low grade fever with marked weight loss but had no cough or haemoptysis. She had no family or personal history of pulmonary TB. The patient did not have any regular antenatal check up but she was immunized against tetanus.

On admission, the patient was anaemic, normotensive & had no lymphadenopathy or organomegally. Higher psychic functions including speech were normal, all cranial nerves were intact & upper limbs revealed no abnormality. A gibbous was present at D7-8 level & tenderness was present at & around the level of D7-8. Motor power was grade '0' with minimum muscle wasting. All reflexes were brisk with bilateral clonus & up going planter reflexes. There was pan sensory loss up to the level of T9 (above the level of umbilicus). Investigations showed hypochromic anaemia & increased ESR. Chest radiography was normal but MRI of the spine confirmed the localized destruction & collapse of the vertebral body & disc between D7-8.

There was also para spinal soft tissue swelling causing significant cord compression. Treatment was started according to advice of Neurologist consisting of Isoniazid 300mg, Rifampicin 450mg, Ethambutol 800mg, Pyrizinamide 1500mg & Pyridoxin 50 mg daily along with short course of steroid (40mg/kg/day) for 4 weeks & gradually tapered within 2 weeks. Neurosurgeon gave opinion for surgical decompression but patient's attendants refused operation. The pregnancy was monitored constantly. Careful attention was paid to the skin to prevent decubitus ulcer. Urinary tract also monitored for any infection, nutritional & haematological status of the patient was assessed. As the presentation of fetus was breech, a decision was made for elective caesarean section at 37 weeks. As there was complete motor & sensory loss from D7 level (above the level of umbilicus) to the lower limbs, LUCS was done without anesthesia under close supervision of anesthesiologist. A healthy female baby was delivered & the patient passed her postoperative periods without any analgesia. Primary healing obtained & the patient discharged on 10th postoperative day with a healthy baby.

During discharge, the patient advised to continue anti TB therapy & to come for follow up after 6 weeks.

After 6 weeks, there was no significant sensory improvement; only deep pinprick sensation was present. Muscle power was grade 2 (can move both lower limbs side to side with difficult but can not move against gravity).

Discussion:

Lower back pain in pregnant women is not always benign & delayed diagnosis can lead to serious complications. The sub clinical course of spinal TB in early pregnancy can progress to aggravation or worsening of the disease leading to spinal injury in late pregnancy. The most difficult being performing spinal nursing in presence of gravid uterus in the third trimester.⁸

The regions of the spine which are of interest to us for their relation to gravid uterus are, the lower dorsal, the lumbar & the sacral vertebrae. Kyphosis due to disease process leads to diminished vertical diameter of the abdominal cavity⁹. In kyphotic pelvis, only the voluntary forces of labour are much affected and delay usually occurs in second stage of labour.^{10, 11} However; histories of these cases reported a considerable number of labour in paraplegic women,

which prove that the assistance of abdominal muscles is not absolutely necessary to the accomplishment of parturition in the absence of deformity of the pelvis or from resistant soft tissue at the outlet.^{12,13,14} The essential involuntary muscles, luckily, not much affected by the disease of the spine & the uterus may be excited to contraction by the most varied peripheral & the central influences^{15,16}.

The onset & detection of labour poses a problem in paraplegic woman. When the lesion is above the 11th thoracic spinal level, painless labor occurs & premature labour tends to be more common.¹⁷ Paraplegia is not a contraindication to vaginal delivery. Episiotomy in paraplegic woman should be repaired with non-absorbable suture (silk or nylon) or delayed absorbable sutures (vicryl or Dexon). Catgut sutures are poorly absorbed and often cause abscess formation.¹⁸ In our patient; we did caesarean section without anesthesia & no analgesia used postoperatively.

According to the recommendations issued in 2003 by the US Centers for Disease Control and Prevention, the Infectious Disease Society of America and American Thoracic Society, a 4-drug regime should be used empirically to treat Pott's disease: Isoniazide & Rifampicin should be administered during the whole course of therapy & additional two drugs are used during first two months of therapy. The duration of treatment is somewhat controversial. It should be individualized & based on the resolution of active symptoms & the clinical stability of the patient. The antitubercular drugs should be associated with steroid (20-60 mg/day for 6-8 weeks)^{19,20}. As our patient was pregnant, we used anti-TB drugs safe for the fetus.

Conclusion:

Tuberculosis can cause significant morbidity in the pregnant woman, fetus & members of the community. The first line agents suggested by CDC during pregnancy seem to have minimal risk of induced congenital anomalies. Education of the patient concerning the potential side effects may decrease maternal morbidity. Therapy should be started as soon as diagnosis of TB is confirmed. Worsening of the neurological condition necessitates early surgical intervention & in some cases, termination of pregnancy. Management by a health care team attentive to the special problems that may complicate pregnancy offers the best chance for a successful pregnancy outcome.

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