Tuberculous paraplegia during pregnancy
A report of 4 cases

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Summary

Four patients who developed tuberculous paraplegia during pregnancy are described. They delivered at term without complications and then underwent successful decompression for paraplegia.

In reviewing published reports, there have been none on tuberculous paraplegia during pregnancy. Before the introduction of chemotherapy for tuberculosis, the morbidity and mortality rates were high in pregnant women. With the exception of malformations in the offspring of women on streptomycin, the risk of an adverse outcome of pregnancy is no greater among pregnant women on antituberculosis therapy than among healthy women. Successful pregnancy in women who are paraplegic because of spinal cord trauma has been reported. Patients with this condition must be carefully monitored because medical and obstetrical complications are common.

Case reports

Case 1
A 38-year-old woman, para 5 gravida 6, developed spastic paraplegia with loss of bladder and bowel control. She was 24 weeks' pregnant and had kyphosis of the dorsal spine at the level of the 8th thoracic vertebra. She had been treated for pulmonary tuberculosis 4 years previously. Radiography was strongly suggestive of tuberculosis and antituberculosis treatment was started.

Case 2
A 23-year-old woman, para 1 gravida 2, with a family history of tuberculosis, developed weakness, loss of weight and night sweats during the 3rd trimester of pregnancy. Clinically, a gibbus was evident at the thoracolumbar junction with spasticity of both lower limbs. She was 28 weeks' pregnant. In view of the strong family history, she was treated with antituberculosis drugs.

Case 3
A 39-year-old woman para 4 gravida 5, had had backache for 1 year. She was treated for tuberculosis after the diagnosis was confirmed on closed-needle biopsy of the 3rd and 4th lumbar vertebrae (Fig. 1). She defaulted from treatment after 6 months. At 36 weeks' gestation she presented to hospital with weakness and inability to walk.

Case 4
A woman who was treated for pulmonary tuberculosis at the age of 20 years developed spasticity of the lower limbs over a period of 2 weeks. Clinically she was 30 weeks' pregnant with a kyphotic deformity of the dorsal spine at the level of the 7th thoracic vertebra when she presented to hospital (Fig. 2).

A diagnosis of tuberculous spondylitis was based on radiography, a Mantoux test and on the strong family history of tuberculosis. All patients were started on antituberculosis therapy consisting of isoniazid 300 mg daily, ethambutol 1200 mg daily, rifampicin 750 mg daily and pyridoxine 25 mg daily. The pregnancies were constantly monitored. Careful attention was paid to the skin to prevent decubitus ulcers. The urinary tract was also carefully monitored for any infections and the nutritional and haematological status of the patients were assessed. At term, each patient was transferred to the labour ward and underwent successful normal vaginal deliveries under supervision. Patient 2 required an episiotomy.

After delivery all patients had radiographic assessment of the involved area and then underwent decompression and fusion. In 3 patients a transthoracic decompression was done and for the lumbar lesion an anterior retroperitoneal approach was used. The findings at surgery were pus and sequestra compressing the cord. Patient 2 again became pregnant 2 years after completing the treatment and had a successful normal vaginal delivery at term.

Results

All patients recovered fully within 3 months after surgical decompression and walked independently at the end of 5 months. Successful bony fusion was evident in 3 cases. In 1 case a rib graft had fractured but the patient remained asymptomatic.

Discussion

Tuberculosis of the spine remains common among people in the lower socio-economic groups in southern Africa. Classic tuberculosis paraplegia involves two vertebral bodies with narrowing of the intervening disc space. The usual cause of paraplegia is pus and sequestra compressing the cord. In general, although there are exceptions to the rule, it is also true that the shorter the duration of paraplegia and the earlier the signs of recovery, the greater is the potential for recovery. All our patients, who had been paralysed for approximately 4 months, before decompression recovered fully. While it is known that some patients with paraparesis may respond to chemotherapy, it is clear that others develop progressive neurological signs on chemotherapy alone. Furthermore, delay in...
Fig. 1. Anteroposterior radiograph showing destruction of L3 and L4 with narrowing of disc space (left). Lateral radiograph 2 years after successful fusion (right).

Fig. 2. Lateral radiograph showing destruction of D7 and D8 (left); follow-up reveals fracture of the graft 3 years after surgery (right).
diagnosis leads to progression of the disease to a state where recovery is sometimes not possible. Therefore urgent surgical decompression of the spinal canal of the neurologically impaired patient is advised. Adendorff et al. recommended prompt spinal decompression, together with chemotherapy (isoniazid, streptomycin, rifampicin, pyrizinamide), for 3 months as the optimal management in the non-pregnant patient.

Since our patients were pregnant, we used a combination of antituberculosis drugs safe for the fetus. Surgical decompression was undertaken after delivery because the pregnant uterus causes poor accessibility, and also in order to minimise the dangers of preterm labour and anaesthesia to the developing fetus. Pregnancy in paraplegic patients poses complications such as urinary tract infection, anaemia, pressure sores, premature labour and autonomic hyperreflexia — a potential life-threatening complication. None of the above complications occurred in our patients. Autonomic hyperreflexia did not occur in our patients because the lesions were below the 6th thoracic vertebra.

The onset and detection of labour poses a problem in the pregnant paraplegic. When the lesion is above the 11th thoracic spinal level, painless labour occurs and premature labour tends to be more common. Only 2 of our patients felt labour pains while the other 2 were unable to perceive contractions. Paraplegia is not a contraindication to vaginal delivery. A severely contracted pelvis is a contraindication to normal delivery, but borderline cases deserve a carefully monitored trial of labour. Radiographic pelvimetry may be useful in determining whether a trial of labour is justifiable. On clinical pelvimetry, all our patients were judged to have adequate pelvises and therefore were allowed normal vaginal delivery. Episiotomies in paraplegics should be repaired with non-absorbable sutures (silk or nylon) or delayed absorbable sutures (Vicryl or Dexon). Catgut sutures are poorly absorbed and often cause abscesses. The episiotomy in 1 of our patients was repaired with silk. Therefore in the successful management of a pregnant paraplegic a team effort involving a physician, a neurologist, rehabilitation personnel, an obstetrician, an anaesthetist and an urologist is required.

REFERENCES