Hypophysectomy in the Treatment of Certain Cases of Paraplegia Due to Secondary Deposits from Carcinoma of the Breast

Case Report

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The value of hypophysectomy in certain cases of carcinoma of the breast is established.1-2 No reference can be found for the use of hypophysectomy as an urgent form of treatment for paraplegia due to compressive secondary deposits from carcinoma of the breast. Operative measures usually consist of decompressive laminectomy, and the more major procedure of hypophysectomy would not normally be considered. The situation will arise, however, when for various reasons decompressive laminectomy is not feasible, and in this case hypophysectomy can be of value.

Case Report

A 41-year-old woman was seen in the neurosurgical outpatient department on November 8, 1966. She had been referred because of a progressive paraparesis of 3 weeks’ duration. In April, 1964, she had complained to her physician of pain in the left arm and an increasing firmness of the left breast. At that time she was found to have a carcinoma of the left breast which was indurated, fixed to the chest wall, and showed skin tethering. Firm axillary nodes were palpable. She was treated with Thiotepa and Decadurabolin with relief of pain in the arm and marked softening of the induration in the breast. Two months later she was sterilized by irradiation.

Three weeks prior to referral she developed some weakness in the left leg followed by weakness in the right. This weakness progressed so that for 2 weeks she had been unable to walk, and for 6 days had had no voluntary movement of the legs. For 3 weeks she had experienced a tingling sensation and involuntary movements of the legs; the latter occurred mainly at night. For 2 days she had had increasing difficulty in micturition and had been unable to pass urine for some hours prior to being seen. For 3 months she had suffered from pain in the left shoulder and more recently had noticed increasing difficulty in lifting her left arm.

She could remember nothing unusual in her past medical history but from early childhood had suffered from a curvature of the spine.

Examination. The whole of the left breast was indurated and firm, the nipple was retracted, and there was marked skin puckering over the breast which was immobile on the chest wall. Tethered glands were palpable in the left axilla. There was marked restriction of movement of the left arm and shoulder, and tenderness to palpation over the upper end of the humerus. The patient had a gross kyphoscoliosis involving the thoracolumbar region. General examination showed no abnormality; in particular, the liver was not palpable and no glands were palpable apart from those in the left axilla.

On neurological examination the cranial nerves were normal. There was some weakness and atrophy of the shoulder muscles of the left arm, but no other neurological abnormality was noted in the arms. The abdominal reflexes were absent. A spastic paraplegia involving both legs equally was present. There was marked increase in tone; both knee jerks and ankle jerks were grossly exaggerated. The plantar responses were extensor. Patella and ankle clonus was noted bilaterally. There was an indefinite sensory level to touch and pinprick in the upper thighs. Pain and temperature sensation was diminished in both legs, the right more than the left, and this was most marked in the lower sacral dermatomes. Perception of position and vibratory sensation were markedly
diminished in the feet. The bladder was palpable to the level of the umbilicus.

X-rays films of the chest showed no evidence of metastases. There was osteolytic metastasis in the left upper humerus. The thoracolumbar spine (Fig. 1) showed a gross kyphoscoliosis but no evidence of metastatic disease. In spite of this finding, it was felt that she almost certainly had a compressive secondary deposit at about the level of the T11-12 vertebrae. It was felt that myelography would be useless in demonstrating the site of the secondary deposit and that operation at this level in view of the gross kyphoscoliosis would be a hazardous procedure with little hope of obtaining an adequate decompression. It was decided, therefore, to offer hypophysectomy. This was accepted.

Operation. Through a right frontal craniotomy, the pituitary stalk was divided and the hypophysis curetted from the sella. At the conclusion of the procedure the pituitary fossa appeared empty. A small metastatic lesion in the bone flap was removed and was identified histologically as a secondary carcinomatous deposit.

Postoperative Course. The patient was given cortisone postoperatively and required injections of pitressin tannate to control her diuresis. Her immediate postoperative comment was that the pain in her left shoulder was relieved. Three days postoperatively there was improved perception of pain and touch in the feet. After 5 days she could perceive pain with bladder distension; at 1 week postoperatively it was possible to remove the bladder catheter permanently because of returned sphincter control. By the 12th postoperative day, with effort, the patient was able to flex and extend the toes of her right foot. After 2 weeks, no sensory abnormality could be detected apart from persistence of diminished vibratory perception in the feet. One month postoperatively she was able to stand for the first time unaided. At the time of discharge 6 weeks postoperatively she was able to walk with the assistance of walking sticks. She still had markedly increased tone in both legs with bilateral ankle clonus. Power in all muscle groups of both legs was still mildly reduced. Sensation was normal.

By this time the induration in the breast had markedly diminished and the breast was mobile on the chest wall. She was discharged taking cortisone acetate, thyroid extract, pitressin snuff, and phenobarbitone. Two months postoperatively she was able to walk into the outpatient clinic without support. She said that she could now do most of her housework except for floor polishing. At this stage she still had a markedly spastic gait and increased tone in her legs.

In January, 1968, 14 months postoperatively, the patient remained well. She was walking normally. The tone and strength of the right leg were normal. Power in the left leg was also normal, but the tone was slightly increased as compared with the right and the plantar response was extensor. She was continuing her replacement therapy but no longer required pitressin snuff.

Discussion

It of course was not absolutely established that the cause of the paraplegia was a compressive metastasis from carcinoma of the breast. After hypophysectomy, however, a marked regression of the primary breast tumor occurred, and the osteolytic secondary deposit in the humerus became pain-free and radiologically sclerotic. The immediate clinical improvement in the paraplegia following hypophysectomy strongly suggests that the

Fig. 1. X-ray film of the thoracolumbar spine showing kyphoscoliosis but no metastasis.
Hypophysectomy for Metastatic Vertebral Cancer

Responsible lesion was a compressive secondary deposit. The x-ray studies of the thoracolumbar spine indicated that the deformity was a long-standing congenital one with no evidence of an inflammatory basis; moreover, the continuing improvement after hypophysectomy and mobilization make it very unlikely that the paraplegia was secondary to an inflammatory lesion improving in response to the short period of enforced rest. Investigations showed no evidence of an active tuberculous lesion.

In our case, a pre-existing spinal abnormality contraindicated decompression. Other situations may arise when decompressive laminectomy for compressive secondary deposits is neither reasonable nor feasible. The size of the secondary deposit may require such an extensive laminectomy that spinal instability would result. Bed sores or other infection may make a surgical approach in the vicinity unwise. The secondary bony involvement may be too extensive. We suggest that hypophysectomy may be of considerable value in these cases. It is also suggested that, in the absence of brain or liver metastases, early paraparesis due to metastatic lesions may be a further indication for hypophysectomy in the treatment of carcinoma of the breast.

Summary

Decompressive laminectomy is the treatment of choice in most cases of cord compression from metastatic carcinoma of the breast. On occasion, decompressive laminectomy is not feasible and such a case is reported. An almost complete recovery from paraplegia occurred following hypophysectomy. We have suggested other complicating factors that may make hypophysectomy a useful form of therapy for cord compression.

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References