Pantopaque pulmonary embolism during myelography

Case report

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A case of Pantopaque pulmonary embolism during myelography is presented. All reported cases of venous intravasation of Pantopaque have been associated with traumatic lumbar tap, and a mechanism whereby a bloody lumbar tap causes venous intravasation and hence Pantopaque pulmonary embolism during myelography is postulated.

KEY WORDS • internal venous plexuses • traumatic lumbar tap • venous intravasation • Pantopaque pulmonary embolism • vertebral venous plexuses

Venous intravasation of Pantopaque with pulmonary embolism is a rare complication of myelography. Of 13 cases of venous intravasation during myelography reported in the English literature,2–4,7,9–18 only six had radiographic demonstration of pulmonary embolism.4,7,10–18

Case Report

A 13-year-old girl presented with a 1-year history of pain in the right hip radiating to the right foot. Clinical examination suggested involvement of the right L-5, S-1, and S-2 nerve roots. At myelography, a lumbar puncture at the L4–5 level was traumatic, it was therefore repeated successfully at L3–4, with 9 ml of Pantopaque introduced intrathecally and the needle removed. A right extradural mass at L-4 and L-5 was demonstrated displacing the Pantopaque column to the left (Fig. 1 left). Fluoroscopy with the patient in an upright position showed Pantopaque in the basivertebral vein of the L-4 vertebra (Fig. 1 right); by the end of the examination only 2 ml remained in the spinal canal. The patient developed dyspnea and complained of tightness of the chest. She was given oxygen therapy and recovered. A chest radiograph showed fine mottling in both lower lobes. At operation the extradural mass was removed and histology showed lymphoblastic leukemia.
Discussion

The veins of the vertebral column form intricate plexuses that are divisible into internal and external groups. They anastomose freely with each other and end in the intervertebral veins which drain into the vertebral, posterior intercostal, lumbar, and lateral sacral veins. Venous drainage from the lumbar vertebral column is through the lateral sacral veins, lumbar veins, and ascending lumbar veins into the inferior vena cava and finally into the pulmonary circulation.

Venous intravasation during lumbar myelography is believed to be due to communication between the internal venous plexuses and the subarachnoid space created by the lumbar puncture needle. Since the cerebrospinal fluid (CSF) pressure is higher than the venous pressure, it forces the Pantopaque-contaminated CSF into the venous system of the vertebral column and hence into the pulmonary circulation. This postulated mechanism of venous intravasation of Pantopaque and hence pulmonary embolism is supported by the fact that all cases reported were associated with a bloody lumbar tap.

Oil or fat embolism does not lead to pulmonary infarction but can be fatal with...
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pre-existing pulmonary insufficiency.14 When oil embolism to the brain occurs it can be fatal.8

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References


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