CASE REPORTS

Lateral Intrathoracic Meningocele with Spontaneous Rupture into the Pleural Cavity Diagnosed with RIHSA Myelography

A. Ryttman
Department of Neuroradiology, Karolinska Sjukhuset, Stockholm, Sweden

Summary. A patient with a lateral intrathoracic meningocele was examined with radioisotope myelography after lumbar intrathecal injection of RIHSA. The diagnosis of a meningocele could be established from the passage of RIHSA into the lesion. The meningocele had ruptured spontaneously into the pleural cavity, as evidenced by RIHSA appearing in the pleural fluid. The activity was recorded by scintigraphy and by direct measurement of samples of pleural fluid. The value of radioisotope myelography in diagnosis and differential diagnosis is emphasised.

The thoracic meningocele is a neurogenic mediastinal tumour and consists of a saccular protrusion of the dura and arachnoid from the spinal canal (cf. Ringertz and Lidholm, 1956; Morrison, 1958; Oosterwijk and Swierenga, 1968). It may be situated medially and bulge anteriorly into the vertebral bodies and discs but more commonly it lies laterally and protrudes through an enlarged intervertebral foramen into the thorax. Since the first case of a lateral meningocele was reported by Pohl in 1933, seventy-six cases have been described. The literature has been reviewed by Akovbiantz and Hün (1969).

Most of the early cases were not diagnosed as meningoceles before operation. Schüller and Ulterall (1938) using Lipiodol myelography were the first to make a correct preoperative diagnosis of a lateral intrathoracic meningocele. Oil myelography was also used by Cross et al. (1949), Canyral (1952) and Baker and Curtis (1953). In 1959 Bunner published two cases in which the diagnosis was established before surgery by means of gas myelography. He considered this method to give "an assured diagnosis and the best information". Swedberg (1963) considered gas myelography to be preferable to oil myelography because of the large volume of positive contrast medium required adequately to fill the cavity of the meningocele.

Radioisotope myelography, as shown by Bauer and Yuhl (1953), provides not only a means of investigating the anatomy of the spinal subarachnoid space but also a way of monitoring the dynamics of the cerebrospinal fluid circulation (Di Chiro et al., 1964; 1966). Using this method, Greitz and Ellertsson (1969) demonstrated a transfer of Riihsa (radioactive iodinated human serum albumin), injected intrathecally in the lumbar area, into a hydromyelic cyst, probably through a narrow connection with the subarachnoid space. It seemed reasonable, therefore, to assume that radioisotope myelography could be utilised to demonstrate the nature and location of a thoracic meningocele as well as its connection with the subarachnoid space. In a recent case, a patient with a known lateral meningocele described by Burmer in 1959, a pleural effusion of uncertain origin had appeared; rupture of the meningocele was considered a possible explanation. Any attempt to confirm this leakage by means of gas myelography would have involved a risk of pneumothorax. Therefore RIHSA cisternography was considered to be the method of choice.

Case Report

The patient, a male born in 1910, had previously been diagnosed as a case of von Recklinghausen’s disease with multiple cutaneous neurinomas. An intrathoracic meningocele had been found upon X-ray examination of the chest in 1956. At that time the presence of a meningocele had been confirmed by oxygen myelography. The patient was readmitted in 1971 because of right shoulder pain and some shortness of breath and because chest X-rays had
shown some lung changes and an increase in size of the meningocele.

The chest X-ray showed a large homogeneous soft tissue mass in the right paravertebral gutter at the level of the upper five thoracic vertebral bodies, which were eroded. The mass was sharply defined inferiorly (Fig. 1). A moderate amount of fluid was present in the right pleura. The changes in the thoracic spine, right intervertebral foramina and the right ribs (Fig. 2) had not altered significantly since 1956, despite the fact that the tumor had increased greatly in size and was now causing compression of the trachea. In order to determine whether the fluid in the pleura was derived from the meningocele, RIHSA myelography was carried out.