

*The Diagnosis and Localization of Tumours of the Spinal Cord by Means of Measurements made on the X-ray Films of the Vertebræ.* (Bull. Neur. Inst. N.Y., vol. iii, p. 359, March, 1934.) *Elsberg, C. A., and Dyke, C. G.*

This paper is based on X-ray films of 100 normal spines and of 86 spines with verified tumours of the spinal cord. The films were taken antero-posteriorly with the tube centred on the mid-line of the body, and at distances of 30 in., 36 in. and 41 in. from the film. On such films of the normal spine the outlines of the pedicles are clearly seen, with the exception of those of the upper three cervical vertebræ and those of the sacral vertebræ. Accurate measurements of the interpedicular space can be made from the fifth cervical to the fifth lumbar vertebræ, and such measurements give reliable information of the comparative size of the canal at different levels. In tumours of the spinal cord there is often, at the level of the growth, an increase in the size of the vertebral canal, demonstrable by measurement of the interpedicular space. This was found in 42% of 67 cases, and was especially frequent in tumours between the tenth thoracic and fifth lumbar vertebræ. Particulars are given of the percentages of extramedullary and extradural tumours showing this sign and no other by X-ray film. The X-ray findings must always be correlated with clinical symptoms. The enlargement of the interpedicular space was found in several cases in which manometric tests had failed to demonstrate a marked spinal subarachnoid block. Taking the X-ray findings, clinical signs and results of examination of the cerebro-spinal fluid, it was often possible to discriminate whether the growth was intra- or extra-dural and to suspect its pathological nature. The authors conclude that measurements of the interpedicular space and the appearance of the inner borders of the pedicles are valuable aids to the diagnosis and localization of tumours of the spinal cord, and such measurements are made easily, accurately and rapidly. The paper is illustrated by reproductions of X-ray photographs.

J. L. FAULL.

*The Symptoms and Diagnosis of Extradural Cysts.* (Bull. Neur. Inst. N.Y., vol. iii, p. 395, March, 1934.) *Elsberg, C. A., Dyke, C. G., and Brewer, E. D.*

A paper based on four cases of extradural cysts of the spinal cord, not dermoid or parasitic, occurring in adolescents between the ages of 12 and 16 years. The characteristic syndrome appeared in an adolescent with the history and symptoms of a progressive spastic paraplegia. Pain is absent or not a prominent symptom. The objective disturbances of sensibility are slight and their upper level is in the mid-thoracic region, usually at the sixth or seventh thoracic dermatome. There is a subarachnoid block, with characteristic changes in the cerebro-spinal fluid. Measurements on antero-posterior X-ray films show that the interpedicular spaces of three or more vertebræ somewhere between the fourth and tenth thoracic vertebræ are enlarged. The pedicles of the affected vertebræ are narrowed and atrophied. The authors consider this combination of symptoms and signs to justify the diagnosis of a large extradural cyst of the spinal cord.

J. L. FAULL.

*Neuro-epithelial Cysts of the Third Ventricle.* (Bull. Neur. Inst. N.Y., vol. iii, p. 446, March, 1934.) *Stookey, B.*

The author suggests that the term "third ventricle tumour" should only be applied to tumours having their origin and growth within the third ventricle, to the exclusion of tumours of the diencephalon. The present paper concerns neuro-epithelial cysts coming within this definition. Thirty-four cases have been collected from the literature and three additional cases are reported. The origin of these tumours is not definitely established. They are believed to be of embryonic origin from the rudimentary paraphysis or from the foetal ependyma. They occur more frequently in males and between the age of 20 and 50. The duration of symptoms is usually short, death occurring within two years in 80% of the cases. Symptoms are due to intermittent acute obstruction of the foramen of Monro or

of the aqueduct of Sylvius causing sudden, acute, internal hydrocephalus. Repeated paroxysmal attacks of acute, headache, usually referred to the orbital region, neither preceded nor followed by other neurological symptoms, are the most characteristic feature. Any one of these attacks may prove fatal. Associated clinical manifestations of disturbed functions of the diencephalon may be present. Details of methods of diagnosis by ventriculography and encephalography are given and the technique of operative cure is discussed.

J. L. FAULL.

*The Nitrite of Amyl Test for the Differentiation of Tumours of the Brain from Vascular Inflammatory Lesions.* (Bull. Neur. Inst. N.Y., vol. iii, p. 513, March, 1934.) Hare, C. C.

The amyl nitrite test for the determination of changes in pressure of the cerebro-spinal fluid is based on the fact that the inhalation of this drug produces a dilatation of the intracranial blood-vessels, with a consequent forcing of the cerebro-spinal fluid from the cranial cavity into the subarachnoid space of the vertebral canal. The test was applied to 18 cases of cerebral tumour, 22 cases of vascular lesion, 18 cases of chronic inflammatory disease, and approximately 50 cases free, as far as was known, from organic disease of the brain. In 89% of cases of cerebral tumour the rise of the fluid in the manometer was above the 320-mm. level. In 86% of the cases with vascular lesions the inhalation of amyl nitrite caused a rise to less than 320 mm. In 89% of the cases with chronic inflammatory lesions (encephalitis, lues) the rise was to less than the 320-mm. level. In the central group the readings were about equally distributed in the region of the 320-mm. level. The author considers that the test is of value as a diagnostic aid in differentiating between expanding lesions and inflammatory or vascular lesions. It is not of value as a method of differential diagnosis between pathological and normal conditions in the brain.

J. L. FAULL.

*The Demonstration of Normal Cerebral Structures by Means of Encephalography. IV. The Subarachnoid Cisterns and Their Contents.* (Bull. Neur. Inst. N.Y., vol. iii, p. 418, March, 1934.) Dyke, C. G., and Davidoff, L. M.

The authors have already described the appearances of the choroid plexuses, the corpora quadrigemina and the cerebral convolutions and sulci as seen in encephalograms. The present article deals with the appearance of the subarachnoid cisterns and the structures bordering on or contained in them.

The cisterns are cisterna magna, pontis, interpeduncularis, chiasmatis, lamina terminalis, fossæ Sylvii and ambiens. It is claimed that it is possible not only to identify all the cisterns but, by examination of stereoscopic films, to study the actual size, shape and position of these spaces and their relationships to neighbouring structures. In many instances it was possible to identify nerves, blood-vessels and portions of the brain contained within or projecting into the cisterns.

J. L. FAULL.

*The Ætiology of Headache. (1) Headache Produced by Injection of Air for Encephalography.* (Bull. Neur. Inst. N.Y., vol. iii, p. 519, March, 1934.) Elsberg, C. A., and Sutherland, R. W.

The various theories of the production of headaches are discussed—the stretching of dura mater, transient obstruction of one or other foramen of Monro or iter, variations in secretory activity of choroid plexuses, etc. The possible anatomical paths are also discussed, and the nerves of the cerebral membranes and of the brain and its blood-vessels. It is suggested that the optic thalami may be the seat of the pain and that, as these structures form part of the walls of the lateral and third ventricle, any change in the conditions of pressure in these cavities would be readily transmitted to the structures which form their walls. Sudden changes of pressure in the ventricles can be produced in a number of ways, such as