occasions. If, however, one of the gall bladders is considered to be normal, opinion differs as to the correct procedure. Ryberg (1960) recommends that when an accessory but otherwise normal gall bladder is found at operation it is justifiable to leave it *in situ*. Calculi may, however, be found in an accessory vesicle on opening it when not only radiological examination but also direct palpation at operation had been considered normal (Owen and Wallace Jones, 1962). Moreover in the seven cases reviewed, eleven of the fourteen vesicles contained stones and one of the three acalculous organs had numerous cholesterol stones. When duplication of the gall bladder is diagnosed pre-operatively or if found unexpectedly at operation, it is suggested that failure to remove both vesicles is submitting the patient to an unnecessary risk and that the correct treatment must be double cholecystectomy in all cases.

Summary

A case of double gall bladder which was diagnosed pre-operatively and confirmed at laparotomy is described and a further six cases are reviewed. The difficulties in diagnosis are discussed and morbid anatomy is compared. Gall stones were found in eleven of the fourteen gall bladders removed and only one organ was proved to be normal. It is suggested that double cholecystectomy should be performed in all cases of gall bladder duplication.

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GRANULAR-CELL MYOBLASTOMA OF THE PITUITARY

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THE following case is reported because of the difficulty of making the diagnosis and its rarity.

Case Report

Mr. C.L.H., Age 69, was first attended medically in 1946 with lobar pneumonia whilst on active Naval service. The resultant emphysema and chronic bronchitis following this episode caused him to be invalided from the service. He was normotensive

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for his age but considerably overweight.

In 1952 he suffered a herniation of the 4th lumbar intervertebral disc. At the same time, he was issued with a surgical belt to control his protuberant abdomen. Six years later he was reviewed and found to be massively overweight, although he had a moderate appetite. His fat was of feminine distribution. He had mild hypertension (BP 180/100 mm. Hg.). His obesity was treated with Preludin.

FIG. 1—Granular-cell Myoblastoma of pituitary. Haematoxylin and Eosin x 66.

He was employed as a bus driver at the time, with normal vision in both eyes. He suffered occasional attacks of asthma. By September 1960 he was two stones lighter in weight, but had begun to have attacks of severe, spasmodic, frontal headaches and vertigo.

On 1.9.60 he visited his doctor's surgery with such an attack, collapsing unconscious when driving away from the surgery. Two months later he had an attack of transient left hemiplegia and six weeks afterwards he relapsed. His hemiparesis persisted and his speech became indistinct. He was then only capable of sedentary work.

After a further year, he had a sudden, severe, frontal headache associated with an attack of blindness which lasted for two days. His weight continued to increase and he developed symptoms of intermittent claudication. A Neurologist reviewed him in June 1962 and found a mild left hemiparesis but no other localising central nervous signs. His hypertension had increased and, from his external appearance, it was suspected that he could be suffering from myxoedema or hypopituitarism. The thyroid gland was of normal size however, and X-ray views of the skull showed no abnormality of the pituitary fossa or erosion of the clinoid processes. The pineal body was calcified and centrally situated.

He was admitted to hospital for further investigation. The only abnormalities found were a serum cholesterol of 382 mg./100 ml. and a creatinine clearance of 53 ml./min. Physically he was markedly hypertensive and had signs of a left hemiparesis. The central nervous system showed no localising signs and the fundus of each eye was normal in appearance. The chest showed signs of chronic bronchitis and emphysema. This was supported by chest X-ray. His hypertension was thought to be due to chronic nephritis, the cerebral episodes were attributed to the effect of his hypertension and treatment with methyl dopa was attempted.

He was discharged after three weeks but readmitted a year later with increasing hypertension, frequency of micturition, polyuria and signs of left ventricular enlargement. His sight remained 6/6 in both eyes and the ocular fundi were normal.

Two weeks later his speech became markedly slurred, he felt ill and his mental state deteriorated

FIG. 2—Macroscopic appearances of tumour after section of the longest diameter into equal thirds.

FIG. 3—Granular-cell myoblastoma of pituitary x 200 diam. Showing details of nuclei.

to show poverty of expression, shallow affect, lack of initiative and diminished general activity. Thereafter he had occasional attacks of nocturnal incontinence and emotional instability, sometimes associated with extreme lethargy and aphasia. He had diminished sensation in the legs but no localising neurological signs other than a left extensor plantar response.

ECG: revealed evidence of myocardial ischaemia. Blood analyses were normal and urine examination negative, but during the final days of life he lost the ability to concentrate his urine, developed mood swings, athetoid movements, complete disorientation and a rise in the blood urea to 98 mg./100 ml. The tendon jerks were increased and the left plantar response briskly extensor. He died in coma.

Necropsy. Thyroid gland normal. Generalised arteriosclerosis, especially of the coronary arteries (thickening of the walls and narrowing of the intima). Extensive cholelithiasis. Chronic bronchitis and emphysema. Small clear-cell adenoma of the right suprarenal cortex. A large right-sided cerebral infarct involving motor-cortex.

A large, firm, well-circumscribed tumour of the pituitary gland, 4 cm. long, 2.5 cm. wide, greyish-white in colour was situated above the sella turcica.

It extended between the tracts of the optic chiasma and impinged upon the substance of the posterior parts of the frontal lobes of the brain.

Histological examination of the tumour revealed a granular-cell myoblastoma of the pituitary gland. (This rare entity was first described by Sternberg in 1921). This is a benign, usually small (0.5-2.0 cm. diam.) tumour occurring in one third of cases in the tongue. About 50% in skin, subcutaneous tissue or breast.

Histology: These tumours are composed of large, polygonal cells, 30-40 μ in diameter. The cells are arranged in diffuse masses, cords or narrow columns. They may be separated by scanty connective tissue stroma. The cells have abundant pink, granular, acidophilic cytoplasm and round or open-textured nuclei. Mitotic figures are scarce and anaplasia absent, though nucleoli are not uncommonly seen.

Most authorities today believe that myoblastomas are derived from nervous tissue, but opinions differ regarding the exact cell type from which they originate. Schwann cells, astrocytes, pituicytes and fibroblasts have all been suggested as the source of origin. Histochemically they have scant content of lipoproteins and mucoproteins. Recent tissue cultures show the myoblastoma to yield spindle cells. They are said to be like fibroblasts rather than myoblasts. Some astrocytes derived from tissue cultures contain granules similar to those of myoblastoma cells.

Summary

A case is described which exhibits features of a difficult diagnostic problem, i.e. an almost silent cerebral tumour. The signs were vague and

inconclusive, as well as being partially obscured by other pathology. No definite diagnosis could be made and it was only at necropsy that a granular-cell myoblastoma of the pituitary was discovered. It was remarkably large and according to the literature is the largest whole tumour yet discovered. The literature has been reviewed and a brief account of the main characteristics of the myoblastoma is included.

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