was traced in this manner described in the literature,¹¹ and the result is reported to be excellent.

One case was treated purely by protection from weight-bearing for eighteen months. There was an excellent clinical and functional result (the best of this type), in spite of a definite coxa vara as shown by the radiograph.

CONCLUSIONS

1. That two types of "slipped epiphysis" can be distinguished, differing in aetiology, pathological anatomy, and treatment.

2. That trauma is an aetiological factor, but that in the "gradual-slip" type some other factor must be present.

3. That evidence of softening of bone, widening of the epiphyseal line, and increased load upon the bone was sought for and, while found in a few cases, was not present in the majority.

4. That some other factor, not yet demonstrated, must be present.

5. That the pathological anatomy of the condition preceding the actual slip is obscure.

6. That gentleness of manipulation and prolonged protection from weight-bearing are essential features in the treatment.

7. That prolonged extension on a frame appears to be the most suitable form of "manipulation" in the gradual-slip type.

My thanks are due to Mr. T. P. McMurray, Mr. T. R. W. Armour, and Mr. Watson Jones for their help and permission to make use of their cases, and to Dr. Kathleen Walker for assistance with the radiographs.

REFERENCES

- ¹ Wilson, P. D.: *Journ. Amer. Med. Assoc.*, November, 1924.
- ² Coote, G.: *Brit. Journ. Rad.*, June, 1929.
- ³ Hunter, John: *Philosophical Transactions*, 1742.
- ⁴ Jones and Lovett: *Orthopaedic Surgery*, 1929.
- ⁵ Harris, H. A.: *Journ. Anat.*, October, 1929.
- ⁶ Ferguson and Howarth: *Journ. Amer. Med. Assoc.*, December, 1931.
- ⁷ Ross Smith: *Practitioner*, April, 1930.
- ⁸ Elmslie, R. C.: *Lancet*, February, 1907.
- ⁹ Jahss, S. A.: *Journ. Bone and Joint Surg.*, 1931, xxix.
- ¹⁰ Perkins, G.: *British Medical Journal*, January, 1932.
- ¹¹ Irwin, S. T.: *Irish Journ. Med. Sci.*, February, 1931.

A CASE OF MALIGNANT THYMOMA

BY

MARGARET LESLIE, L.R.C.P. & S.ED.

MUIRHEAD SCHOLAR, CLINICAL LABORATORY, VICTORIA INFIRMARY,
GLASGOW

AND

WILLIAM S. BELL, M.B., CH.B.

LATE HOUSE-PHYSICIAN, VICTORIA INFIRMARY, GLASGOW

(With Special Plate)

The following case is of interest both from the clinical and from the pathological aspects.

The patient, a boy aged 2½ years, was admitted to the Victoria Infirmary, Glasgow, on February 4th, 1932, and died on the following day.

HISTORY

Five weeks before admission the child became rather listless, went off his food, and developed an irritating cough, which troubled him at night. Three weeks later it was noticed that he seemed to have a difficulty in breathing, and that he was crowing at night. He was seen by the local doctor, who sent him to Kilmarnock Fever Hospital with a provisional diagnosis of laryngeal diphtheria. Dr. Nesbitt, medical officer of health for Kilmarnock, took charge of the case in the Fever Hospital, and after appropriate treatment for diphtheria had been given

with no evident results, the question of a lung lesion was raised—either a pneumonic condition or one due to a foreign body in the left bronchus. At the time of admission to the infirmary no bronchoscopic examination had been carried out.

CLINICAL REPORT (DR. BELL)

The patient is a well-nourished, well-developed child. The face, mucous membranes, and finger-nails are cyanosed; there is well-marked circumoral pallor. Both external jugular veins are greatly distended, as are the veins in the backs of the hands and arms. The suprasternal fossa is full, presenting the appearance of a goitre. It feels firm. There is bulging of the left side of the chest, lack of expansion, and absence of visible cardiac impulse. Percussion gives absolute dullness: breath sounds over the right lung are harsh and puerile, and abundant rales are present. Over the left lung the breath sounds are tubular, having a nasal quality. The pulse is rapid, thready, and regular in rhythm. There is no area of cardiac dullness. The heart sounds, audible only well to the left in the anterior axillary line, appear to be pure: The mouth is dry, and sordes is present on the tongue and lips. The teeth are healthy. The abdomen is somewhat distended, and moves with respiration. The liver edge is palpable about 1½ fingerbreadths below the costal margin.

The renal system appears to be normal; the pupils are equal and react to light; the reflexes are normal. A chest radiograph shows an entire dulling of the left side of chest, with no indication of lung tissue. The dullness extends over to the right side, and encroaches upon the right lung.

The left side of the chest was explored, and about 10 oz. of milky fluid was removed, which showed on examination the presence of lymphocytes, but no evidence of organisms or the presence of fat. After exploration the child was very restless, cyanosed, and breathless; stridor was present, and his general condition became very grave. Oxygen was administered and injections of atropine and morphine, but without relief. The stridor became worse, and immediate tracheotomy was performed, but without beneficial result.

POST-MORTEM EXAMINATION

Necropsy, performed by Dr. Anderson on February 6th, revealed the following findings.

On opening the chest there was found a tumour mass measuring about 6 inches in length, 4 to 4½ inches in breadth, and 1½ inches in depth. It was situated in front of the pericardium, and spread outwards towards both pleural sacs. It was definitely a superior and anterior mediastinal growth occurring at the site of the thymus gland. It presented a globular appearance, was pale in colour, and of firm but not dense consistence. There was no evidence of the presence of haemorrhages. The right pleural cavity was normal. The hilum of the right lung showed the presence of several enlarged glands. The bronchus and pulmonary artery were normal. On section the right lung was congested, but otherwise normal. The left pleural cavity contained some turbid but non-purulent fluid. Adhesions to the upper lobe were present. The hilum of the lung presented several enlarged glands; the bronchus and pulmonary artery were normal. The upper lobe of the lung showed the presence of adhesions, and was in a state of collapse. The lower lobe was congested, and showed several small areas of localized collapse. On the surface of the lung were a few petechial haemorrhages.

The heart and pericardium were covered over by the tumour mass; chambers, valves, and muscular consistence were normal.

Apart from the main mass, areas of tumour growth were present in the pleuro-pericardial region, and some of the posterior mediastinal glands were involved. There was also a spread along the lymphatics in the intercostal spaces; on the left side the spread reached the anterior axillary border, while on the right side nodules were present in the intercostal spaces close to the vertebral column. The spleen was slightly enlarged and on section showed an increase of lymphoid tissue, with the Malpighian bodies unduly prominent. The liver was slightly enlarged, and on section showed a cloudy appearance. The pancreas was normal, but a few enlarged glands were present at the head. The suprarenals, stomach, and intestines

were normal. The kidneys were both enlarged, almost symmetrically so. They showed a lobulated appearance, with large areas of projecting pale cortex. On section the pale areas involved the external rind of the cortex and the inter-medullary areas. The medullae and pelves of the kidneys were normal. The capsules were not adherent.

Microscopical Examination

Sections from the anterior tumour mass showed a glandular appearance, but no apparent division into cortex and medullary regions, as in the normal thymus, and with a distinct absence of Hassall's corpuscles. The main part was composed of round cells about the size of small lymphocytes, with deeply staining fragmented nuclei and a small amount of clear protoplasm. Meagre supporting fibrous tissue showed the presence of a number of branched reticulum cells. In addition, there were occasional small lymphocytes, granular leucocytes, and plasma cells. Blood vessels were not numerous.

The capsule of the kidney appeared normal. Immediately underneath it was an area of marked cellular infiltration, consisting of cells like those which were most abundant in the mediastinal growth. A few small lymphocytes and some typical stroma cells of thymus character were also seen. The glomeruli and the cortical tubules were set in a stroma which was densely packed with those cells, and a few of the glomeruli were infiltrated by them. The infiltration was confined chiefly to the region of the cortex, the medullary portion being for the greater part free. Some extravasated blood was seen in some of the tubules, and there was cloudy swelling of the epithelium. The effect of the tumour-cell infiltration was to compress and obliterate a number of the tubules.

The sections of the heart showed a round-celled infiltration between the muscular bundles, limited to the superficial region, and not extending any distance into the substance of the muscle. Definite loss of striation of the muscle cells was apparent. An area of the collapsed lung which was adherent to the tumour mass showed some cellular infiltration to be present, but, as in the case of the heart, it was only the adjacent alveoli that were affected, the collapse beyond being probably due to blockage of a bronchus. Sections of the glands showed very definite subcapsular spread of the tumour cells, while deeper down they were grouped round the lymph channels.

Microscopical examination of the tumour showed the characteristics of a round-celled sarcoma, differing from the lymphosarcoma of glandular type in size and staining property of the cell. The individual cells were for the most part of spherical shape, with fairly large-sized and deeply staining nuclei and small amounts of surrounding protoplasm. Some of the cells tended towards the short columnar type, but this was not a marked feature of the growth. The cells were arranged in dense groups with a small amount of fibrous tissue stroma, and vessels in the denser areas were few in number. No haemorrhages were seen. The reticulum of the thymus was definitely represented.

COMMENTARY

The question of lymphadenoma might be raised, but all the features of the case are against such an opinion. The possibility of a leukaemic enlargement of the thymus was weighed, and the involvement of kidney might favour such a view, but the absence of leukaemic infiltrations tends to negative the suggestion. On the other hand, no clinical examination of the blood had been made.

The tumour cannot be regarded as of the nature of a cancer of thymic origin derived from cells of the reticulum; nor can it be regarded as of the type of small oat-celled cancer described in cases of lung and mediastinal tumours by Barnard, and in thymic tumours by Duguid and Kennedy.

We have to acknowledge our indebtedness to Dr. Douglas Russell for permission to use the clinical report, Dr. Nesbitt for the history prior to admission to the infirmary, Dr. Jackson Wilson for the use of the x-ray plate and report, and Dr. John Anderson for the post-mortem report and the material studied, and for his advice and assistance.

VARICELLA IN OLD AGE

BY

J. D. ROLLESTON, M.D., F.R.C.P.

MEDICAL SUPERINTENDENT, WESTERN HOSPITAL, LONDON COUNTY COUNCIL

Until the beginning of the present century varicella was regarded almost exclusively as a disease of childhood; this can be seen from the statements of Eichhorst, Gee, Gregory, Moore, von Jürgensen, and Thomas. Undoubtedly this belief was in part responsible for the fact—which I have mentioned elsewhere—that numerous cases of varicella were erroneously certified as small-pox during the epidemic of that disease in 1901-2. According to the late Dr. Wanklyn, whose assistant I was at that time, no less than 16.7 per cent. of the 300 cases of chicken-pox sent to the receiving station at South Wharf during the epidemic with the certificate of small-pox were over 18 years of age. Several articles were subsequently published recording cases of varicella in adults, but all the writers were agreed as to its rarity in old age. Von Genser, for instance, states that of 29,250 cases of varicella notified in Vienna from 1894 to 1900 inclusive, only six were over 50, four being 51 and 55, and one each between 56 and 60 and 61 and 65. MacCombie, who had a remarkably extensive experience of acute exanthemata in various London fever hospitals, stated in 1906 that he had seen only seven cases of chicken-pox in persons over 30, one of them being in a woman aged 71. Writing in 1928, Schamberg and Kolmer stated that 49 was the most advanced age at which they had seen a case of the disease. In a remarkable epidemic of varicella recently reported by De Decker at Kipushi in the Belgian Congo the majority of the cases occurred in adults, though no mention is made of any aged persons.

During the period January 1st, 1926, to September 30th, 1932, twenty-nine cases of chicken-pox in patients aged 18 and upwards were admitted to the Western Hospital, and three occurred in members of the staff—namely, in two nurses aged 20 and 35 and in a wardmaid of 18. Of the twenty-nine patients only three were over 30—two men aged 31 and 64 respectively, and a woman aged 76. The man aged 64, in whom the diagnosis of chicken-pox had been confirmed by Dr. Wanklyn, was one of a series, to which I have referred elsewhere, of five fatal cases of the disease which have come under my observation during the last thirty-two years. He was an alcoholic and debilitated subject, who was admitted to hospital with a copious eruption of varicella complicated by bronchopneumonia and albuminuria, and died three days later. The necropsy showed bronchopneumonia of both lungs, a large fatty and dilated heart, and cirrhosis of the liver.

I was asked on June 25th, 1932, to see the woman aged 76 in my capacity as one of the small-pox consultants to the London County Council, because her age and the severity of her illness had suggested the possibility of small-pox. The distribution of the lesions, however, and their size, shape, and multiformity, as well as the history of their appearance on the first day of disease, indicated chicken-pox. The diagnosis, moreover, was subsequently confirmed by a history of exposure to the disease within the previous fortnight at a hospital where she had been under treatment by deep x-ray therapy for lymphosarcoma. On admission to the Western Hospital there was considerable constitutional disturbance, and the temperature was 102°. The presence of lymphosarcoma was indicated by enlarged glands in the neck, axillae, and groins. In addition to its typical appearance and distribution elsewhere the eruption of chicken-pox was confluent over the parts of the left side of front and back of the chest and left arm, where she had undergone deep x-ray therapy. The temperature became finally settled on the third day after admission, and there was a rapid improvement in the general