A CASE OF RAPID PHTHISIS WITH PULMONARY HYPERTROPHIC OSTEO-ARTHROPATHY, IN A CHILD OF SIX.

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The following case, which came under the writer's notice in the practice of the Clinique Mackay, Huelva, is of interest not only on account of the infrequency of pulmonary tuberculosis compared to other manifestations of this disease in childhood, but also from the occurrence of that extremely rare condition in the child—pulmonary hypertrophic osteo-arthropathy, and the suggestion of a causal bovine infection. The use of the term "Rapid Phthisis" as applied to this case will be considered later.

Case.—A. G. B., male child, æt. 6, a patient of Dr. Pedro Seras, Huelva, was first seen on 12th August 1907, complaining of pain in the chest, cough, and vomiting.

Family History.—The child's parents are both alive and well, as are also the grandparents, and no history of tubercle could be elicited. Patient is the third child, the two previous children being both dead, —the first at one month after three days' "gastric fever," the second at ten months from "bronchitis." The family are in fairly comfortable circumstances.

Patient's History.—Born weak, the patient was reared at the breast for the first two years. During his first six months of life he was thin and frequently vomited, but when 1 year old appeared to be a healthy child. At the age of 1 he had "swollen throat," and when 2 years old suffered from "gastric fever." (Dr. Macdonald of Huelva informs us that this popular synonym is frequently tantamount to remittent malaria.) The patient's mother is quite certain that during these two years he had absolutely nothing but breast feeding. After this he was given "what was going"—the food mainly consisting of
cow's and goat's milk, cow's and goat's flesh, bread, soups, fish, a variety of vegetables and fruits, large quantities of sugar, and a considerable amount of olive oil throughout the entire cuisine. At the age of 3 one of the anterior sterno-mastoid glands on the left side of the neck enlarged, and, when patient was 4, this was opened at the Provincial Hospital, Huelva, and pus let out. Prior to the present illness the child slept well, but always, so the mother noted, with open eyes.

Patient got definitely ill in January 1907, but prior to this was feverish for some time. In January he had pain in the chest with slight cough, and in April 1907 he underwent an operation for pyothorax of the left pleural cavity, when a considerable quantity of pus was removed.

At date of present examination, 12th August, the patient complains of pain, cough, and vomiting. The facies is distinctly tuberculous. The features are well formed, the frontal eminences being unusually prominent. Of pale complexion and thoughtful expression, the patient has fine dark silky hair, growing well forward on the temples, large brown eyes overhung by long eyelashes, with eyebrows which tend to meet in the middle line. The pupils are equal, moderately dilated, while the sclerotics are clear and tinted blue. The child is thin, of poor muscular development, fretful, and highly nervous. Height, 104 cms.; weight, 16.4 kilos. The cough is short, dry, explosive in character, and is worse at night. The patient coughs up a little sputum in the morning, which has never been noted to contain blood. He has pain all over the chest, especially over the right apex. The appetite is poor, vomiting immediately after food is frequent, and there is pain in the stomach after meals. The bowels are irregular—constipation and diarrhoea alternately. He has great sweats at night, has lost weight rapidly, and his sleep is broken by dreams and nightmares. Pulse, 90; respiration, 27.

Inspection.—Thorax.—The chest is badly formed, flat, cone-shaped, and of greater antero-posterior dimensions below than above. The shoulders are sloping, and supraclavicular hollows are present, increased on inspiration. Over the upper anterior portion of the chest a blue venous network is well marked, and over the sixth left rib in the anterior axillary line there is the scar of a 3-inch incision by which the pyothorax was tapped. This has the red-blue colour of a tuberculous scar, as has also the cicatrix on the left side of the neck. All the muscles show myotatic irritability, and myoidema is well marked on the pectorals and on the spino-scapular muscles. Expansion is diminished at both apices and the breathing is mostly abdominal.

| Mensuration                   | In Expiration | Amount of Expansion |
|-------------------------------|---------------|---------------------|
| At level of nipples           | 57 cms.       | 0.4 cms.            |
| At level of eighth rib        | 56.5 "        | 0.5 "              |
| Abdomen at umbilicus          | 56 "          | 0.75 "             |
A CASE OF RAPID PHthisis.

PALPATION.—When the child cries a marked increase in vocal fremitus is palpable over the entirety of the left lung, and over the upper lobe of the right.

PERCUSSION.—The percussion note is dulled all over the left lung, and over the upper lobe of the right both in front and behind.

AUSCULTATION.—Left lung.—Breathing is high pitched, bronchial in character over the entirety of the lung, accompanied here and there by moist rales on expiration. Vocal resonance is increased to agophony. Right lung.—High pitched bronchial breathing over the upper lobe in front and behind. When the child breathes deeply, pleuritic friction is heard, soft in character. Over the middle and lower lobes the breath sounds are weak and feeble in quality. Sputum.—This contains tubercle bacilli and elastic fibres.

Heart.—The apex-beat is diffuse, but best felt in the fifth intercostal space in the mid-clavicular line. The base and left border of the heart are normal, but the right heart is considerably dilated, the cardiac dulness extending 3 cms. from the right margin of the sternal, and on expiration the outline of this portion of the heart is apparent against the thoracic wall. On auscultation there is a loud reduplicated second sound, and a soft, blowing, systolic, tricuspid murmur.

Abdomen.—The abdomen is prominent, enlarged, and moderately firm. The umbilical sulcus lies flush with the skin, and the superficial abdominal veins are dilated. In their arrangement these latter show the early “cave-porte” type of Gilbert and Villaret (1) to which reference will later be made. There is no pain on palpation, and no fluid can be detected. The liver is enlarged, extending one finger-breadth below the right costal margin. The outlines of the stomach are normal, but the mesentery can be felt as a thickened mass lying across the abdomen. No glands are palpable, and the spleen is not enlarged.

Urine.—Sp. gr., 1022; acid reaction, and no abnormal constituents.

Treatment was palliative in view of the obviously hopeless prognosis.

The osseous system presents an absolutely typical picture of pulmonary hypertrophic osteo-arthropathy. The frontal eminences are well marked, but the superior maxillary bones are normal. In the upper extremities there are typical abnormalities of the fingers. These appear lengthened compared to the size of the hand, the proximal and middle phalanges are normal, but the distal phalanges of all the digits are curved antero-posteriorly and thickened, the nails being large and rounded, growing beyond the pulp laterally and over the tip of the finger. They each resemble “a flattened drumstick,” to quote Marie’s (2) picturesque description (Plate VIII.). The deformities in the lower extremities are more marked (Plate IX. Fig. 1). There is great enlargement of the condyles of the femurs, particularly of the internal condyles, which stand out prominent. The knee-cap is not enlarged, but is carried out in front of the condyles. The whole articulation appears enlarged, and but for the angularity of the deformity and the absence of fluid one is forcibly reminded of Charcot’s joint by the large mass standing out from wasted muscles. The tibia and
fibula are not enlarged, but the hypertrophy of the internal condyle has brought about a condition of genu valgus, and has produced a compensatory concave inward curve of both tibia. The terminal phalanges of the toes present a similar deformity to that of the fingers, and equally well marked (Plate IX, Fig. 2). Before proceeding to a further consideration of the case, it will be well to record the progress of the disease as determined at the next examination on 13th September, one month later.

**September 13.**—For the last fortnight the patient has coughed up a considerable quantity of nummular sputum, has been fevered, and has coughed more. The left lung is unaltered. Over the upper and middle lobes of the right lung there is high-pitched bronchial breathing, with loud sonorous rhonchi on expiration, and extremely loud pleuritic friction. Over the lower lobe, inspiration is harsh, and at the base of the lower lobe behind there is fine pleuritic friction giving the "bruit cuivre." Pulse, 120; temperature, 97°-5 Fahr.

**September 14.**—Over the lower right lobes there are fine crepitations on inspiration. Pulse, 132; temperature, 97°-4 Fahr.

**September 23.**—The condition of the lung is the same, except for the cessation of pleuritic friction over the upper lobes of the right lung, and the appearance of medium moist râles in the lower lobe of the same lung. Pulse, 140; respirations, 48. Further, a swelling has appeared at the lower border of the right pectoralis major muscle and in the lower right quadrant of the mamma. It was noticed three days ago, is the size of a hen's egg, is tender on pressure, and apparently is an infected gland.

**October 16.**—Swelling was opened 30th September by a "practicante,"¹ and wound is now a discharging tubercular sinus.

REMARKS.—It is clear that in this case we are dealing with a grave form of pulmonary tuberculosis, which threatens to destroy life in the space of a few weeks. Were one to attempt the definition of the extent of the disease by an anatomical classification, as that of Turban, it would be recorded under "Stadium III.,"—that is, severe disease affecting two or more lobes of the lung; but when one remembers that the patient got ill in January and that eight months later both lungs are infected in every lobe, the limitations of an anatomical classification as applied to a clinical pathological process are surely apparent. For, while this patient would be registered under "Stadium III.," so also would be an old-standing case with vomicae in both lungs; and further, such a nomenclature is incompetent to express the pathological process at work in different portions of the lungs, as here elicited by the physical signs—congestion, catarrh, and consolidation; nor can it give the faintest suggestion of the dire rapidity of the disease. If now we turn to the pathological nomenclature of pulmonary tuberculosis, according to Osler, the case is still difficult to class. Osler (2) groups pulmonary tuberculosis under "(1) Tuberculo-

¹ A "practicante" is a practitioner corresponding to the old apothecary.
pneumonic phthisis—acute phthisis; (2) chronic ulcerative phthisis; and (3) fibroid phthisis.” The second and third are at once ruled out of court, for the disease is neither chronic ulcerative phthisis, nor is it this condition with an acute tuberculous pneumonia superimposed. One is left with Group 1, “acute phthisis, galloping consumption, or phthisis florida,” and in this group two types are recognised—

(a) Pneumonic form, whose onset resembles that of lobar pneumonia, and where death may occur in three weeks, or the case pass into one of chronic phthisis. It is pathologically a lobar pneumonia, due to the pneumatogenous distribution of tubercle bacilli.

(b) Acute tuberculous broncho-pneumonia, resembling catarrhal pneumonia, and where also death may occur in a few days or weeks, or the case become chronic. Pathologically it is a catarrhal pneumonia of tuberculous origin, the pneumatogenous miliary tuberculosis of Ziegler (4).

From this brief but sufficient summary of the classification as present in use, it would seem that a clinical group is yet wanting for cases such as the present. We have the disease coming on in the left lung, rapidly extending by the lymphatics, as indicated by the tuberculous pleurisy and exudation, and now spreading throughout the entirety of the right lung. When first seen the upper lobe alone was solid, but a month later the middle lobe had undergone consolidation, its pleura was the seat of tuberculous inflammation, and the lower right lobe was also involved. In its totality we find that this case in nine months has traversed those stages through which chronic phthisis may pass, it may be, for years, and excepting the difference in time, it appears to the writer that the two present a striking similarity, both clinically and pathologically. Under chronic pulmonary tuberculosis, Ziegler (4) described the following pathological entity as a virulent form of the disease:—

“In other cases the disease is virulent from the outset, inasmuch as the tuberculous patches speedily become caseous and softened, with little tendency to the formation of firm fibrous tissue. Rapid disintegration of the affected parts is the natural result, cavities are soon produced, and the metastases that are formed tend in like manner to undergo caseous degeneration. The outcome is that in a very short space of time the lung is studded with caseous patches and riddled with cavities. The process might thus be termed casseative or ulcerative caseous tuberculosis; clinically, it is sometimes spoken of as phthisis florida. From its pathogenesis it might be called nodular caseous tuberculous broncho-pneumonia. The softening and disintegration of the pulmonary tissue are sometimes so extreme that the process almost resembles rapid suppuration.

“In this form of tuberculosis the separate patches are usually
larger than they are in the indurative form, and they readily coalesce to form still larger patches. Not uncommonly the infiltration spreads about the lesions over entire lobules or groups of contiguous lobules, which thus become at first greyish-red, then undergo grey hepatisation, and finally turn yellowish, opaque, and caseous. In this way the nodular variety passes into caseous lobular broncho-pneumonia. By the coalescence of many such infiltrated lobules an entire lobe may become caseous, and the result is occasionally described as caseous lobar pneumonia."

It is submitted that the physical signs of the case under consideration are not in discord with the above pathological condition. One may recall a similar case seen in the Liverpool Hospital for Consumption. The patient, a lad aged 15, under the care of Dr. John Owen, Hon. Assistant Physician to the hospital, had been ill for one year. He had attended the hospital at the beginning of his illness but not since, and when seen was greatly emaciated, the lungs showing complete consolidation of all lobes, bronchial breathing, with moist râles and rhonchi all over the chest. He returned a week later, and was still at his work—that of chemist's assistant. Two things were remarkable in this case: the mental attitude of absolute unconcerned cheerfulness, and the absence of dyspnœa, illustrating the small amount of pulmonary tissue compatible with life. The next day patient's brother came to the hospital for a death certificate. From his description death was due to syncope.

For cases such as these—virulent forms of pulmonary tuberculosis, running a course similar to that of chronic phthisis clinically, except for the destruction of life in a shorter time, and pathologically, barring the absence of fibrous tissue and attempts at repair—for such cases, not acute but rapid, which at present wander through the gamut of every classification, the writer suggests the advisability of a return to the simpler clinical nomenclature of Trousseau (5), who described these cases as "Rapid Phthisis." The dictum of the great clinician was as follows:—

"With the exception of the rapidity of its pace, this form of the disease, to which we apply the term rapid, presents the same symptoms during life, and the same anatomical lesions after death, as ordinary phthisis, the progress of which is generally chronic. It is the same disease as ordinary phthisis, though it generally runs its course with much more rapidity. There are also cases to which the term latent phthisis is given, because the symptoms remain obscure, and are masked by complications which are apt to lead us astray in our diagnosis. Nevertheless, whether the form be rapid or latent, regular or irregular, it is, I repeat, always the same disease. But acute, or galloping phthisis as it is more generally called, is not the same disease as ordinary phthisis."

If now we consider the abdomen, we find it presents a symptom-
complex of tuberculous lesions, which complicate the pulmonary condition. Apart from the vomiting and stomachic pain after food (possibly also a sign of the disease in the lungs), the child has no symptoms referable to the abdomen, yet nevertheless there are physical signs from which definite conclusions can be drawn. The abdomen is enlarged, tympanitic, but not tender, constipation is followed by offensive diarrhoea, and on palpation a thickened mesentery can be made out across the upper part, although no actual glands can be felt. Considerable light is thrown on the situation by a consideration of the arrangement of the dilated superficial veins, which show the early "cave-porte" type of Gilbert and Villaret (1). According to these authors, if there be a compression of the inferior vena cava alone, as occurs at the beginning of some forms of tuberculous peritonitis, in limited abdominal tumours, and in hernias of the abdominal wall, the collateral circulation is always subumbilical and limited to the level of the iliac regions. As the disease spreads and the circulatory obstruction is increased, the dilated veins mount higher and invade the supra-umbilical region, as is seen in the case of those veins which dilate in the case of obstruction in the course of the portal vein. The result is the mixed "cave-porte" type of collateral circulation most frequently seen in tuberculous or cancerous peritonitis. From the veins then, in conjunction with the other signs, we may deduce the existence of a lesion in the mesentery and in the peritoneum of the lower part of the abdomen — tabes mesenterica and chronic tuberculous peritonitis. In view of this the temperature, which was taken twice daily for a week, is of considerable interest. No antifebrile or antipyretic drug was given, yet the temperature was subnormal, although the pulse remained persistently rapid. Considering the lesion in the lung, this is only to be explained by the nature of the abdominal condition, and according to Osler (9) subnormal temperatures are common in chronic tuberculous peritonitis, the curious thing being, however, that in this case an "abdominal" temperature should take precedence of the ordinary "pulmonary" temperature.

The condition of pulmonary hypertrophic osteo-arthritis, originally noted by Bamberger (7), was first described by Marie and Souza-Leite (8) in 1889. It is unnecessary here to recall their description of the disease, as the case above recorded is in complete conformity with the classical signs. We were first advised of the very extreme rarity of this phenomenon in children by Dr. George A. Gibson, who kindly wrote us on the case, and a perusal of the French and English literature leads us to the further belief that not only is this the youngest recorded case of the disease, but also the first instance to be noted where it occurs in conjunction with rapid pulmonary tuberculosis.

The etiology and pathology of this condition are quite unknown. Thayer's (9) collection of fifty-five cases from the literature showed
—forty-three following pulmonary affections, three following heart disease, three following syphilis, two following chronic diarrhoea, one following spinal caries, and three from unknown causes. Arnold (19), Marie (2), and Thomson (11) have described the lesions as being due to hyperostosis, osteophytes being deposited on the surfaces of the bones in response to chronic irritation of the periosteum or the marrow by toxins in the blood, absorbed from the pulmonary disease. Thorburn (12) considers it to be a benign type of osseous and articular tuberculosis. Certain cases have been recorded by Batty Shaw and Higham Cooper (13), Florard (14), and Decloux and Lippman (15), where the most careful examination failed to discover any pulmonary lesion. In view of this, it is of interest to note that in 1902, before the Medical Society of the Paris Hospitals, Thoinot and Delamarre (16) showed a patient with classical deformities, in whom ordinary examination had suggested the absence of any abnormalities in the lungs, but where the X-rays revealed the presence of an opaque mass in the middle lobe of the right lung, which they suggest may have been a hydatid cyst. Bécère, who made the X-ray examination, said that in these rare cases where no lesion was found, the examination was probably at fault, and were X-rays used it was probable that a profound lesion would be discovered. Certain it is that a deep lesion may exist in either lung and defy diagnosis by ordinary methods.

Much experimental work is required on this subject, but it may be a demonstration will be forthcoming that this hyperosteitis is due to the stimulation of the osteophytes by the toxins of tubercle. Marcozzi (17) in a recent work on the actions of the toxins of the tubercle bacillus, which, if confirmed, will throw considerable light on the whole pathology of tuberculosis, has stated that he has observed inflammatory and hypertrophic phenomena of the cellular elements of the testicle entirely due to the stimulus of diluted toxins in the blood. If we grant the existence of toxins in the blood capable of producing inflammatory and hypertrophic phenomena, it is not strange that their influence should be most manifest in those situations where the blood flow is greatest. It is one of the paradoxes of physiology that the volume of blood in the capillaries is greater than that in the arteries, and if the capillary stream is slow, the parts supplied show the greater metabolism. The terminal phalanges are nourished by a circulation which is purely capillary, and whose action on the metabolism of these tissues is characterised by two facts—firstly, by the appearance of the primary ossification centres of the distal phalange in the upper extremity at the ninth week of fetal life, in the lower extremity at the twelfth week, and which further have been shown by Lambertz (18) to be the first of the phalangeal centres to ossify; secondly, by the growth of the nail during life. Again, at the lower end of the femur, while growth is proceeding, the ossifying cartilage is supplied by capillaries from the perichondrium, periosteum,
and from the medullary arteries, being the largest and most vascular ossifying cartilage in the body. The hypothesis suggested here is that in the presence of tuberculous toxins in the blood, capable in certain dilutions of inducing inflammatory phenomena, the osteophytes in those areas are stimulated to action by the amount of toxin with which they are brought into contact, through the large capillary blood supply, whereby there results an excessive and pathological formation of bone.

Lastly, we may consider the nature of the infection—bovine or human. From the facies and the early history there is little doubt that this child was marked out for tubercle, nor is this supposition weakened by the absence of phthisis in the family, for it is probable that predisposition to disease may have its roots in deeper and more subtle disharmonies of heredity than actual disease in the parents. Looking back on the first two years of the patient's life, during which time he was fed at the breast, there is no evidence of any sign of tuberculosis. At the age of 3, however, after consuming for one year cow's milk and flesh, a tuberculous gland developed on the left side of the neck. In the south of Spain tuberculosis is extremely common among cows and tame cattle, the fighting bull being comparatively immune—a wild animal living in the "optimum pabulum" of existence; and further, there is no efficient inspection of meat or milk. Next, the lung became affected on the same side as the gland, and on the opposite side to that in which 90 per cent. of "pneumatogenous" tuberculous lesions commence. Here it may be remarked that we have seen two other cases where glands in the neck were followed by a pulmonary lesion in the corresponding apex. It is not certain when the abdominal disease appeared, but it seemingly is a chronic condition, and possibly the enlarged gland in the neck was secondary to it, and similar to the early enlargement of the supraclavicular gland seen in cancer of the stomach. The latest lesion in the subpectoral gland indicates that generalised secondary infection has now set in.

It is impossible to dogmatise on the nature of the infection one way or the other, but the absence of contact with phthisis, the age at which it commenced, and the history of its onset, although insufficient to demonstrate bovine infection, is more than enough to shake any reasonable belief in the proposition, which was never more than a pure assertion, that bovine tuberculosis is not transmitted to man.

We take pleasure in recording here our thanks to Dr. W. A. Mackay and to Dr. Ian Macdonald of the Clinique Mackay, Huelva, for having placed this case among others under our care.

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RÉSUMÉ OF SOME RECENT FOREIGN LITERATURE ON THE SURGERY OF THE PROSTATE.

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Surgical procedures which involve the prostate gland appear inevitably to lead to controversy. During the evolution of the modern operation of prostatectomy, various debatable matters have arisen, and the discussions which have been aroused have been carried on with scarcely less animation than were those which engaged lithotomists when “the battle of the gorget” was being fought in the early years of last century. If these discussions have not always been edifying, they have at least served the useful purpose of concentrating attention on certain essential aspects of the question. The anatomy of the gland, its physiological functions, and the rôle it plays in producing the symptoms of “prostatism,” have all been studied afresh, and much valuable information has been elicited. The effects which follow the removal of the organ are now being observed, and in time will be more fully known. It cannot yet be claimed that the technique of the operation is perfect, but the procedure may at least be said to have passed beyond the experimental stage, and to have established itself as a rational, scientific surgical measure.

Comparatively few surgeons have had a sufficiently extensive personal experience of the various methods of performing the operation to enable them to appraise the true value of each, and the majority of published opinions are as yet only tentative.

From a series of recent papers and reports we have attempted to cull some of the current views on various aspects of the subject.

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