high up under the diaphragm, and it was so inconspicuous that at the necropsy it was not noticed during the removal of the organ, and was only detected when the stomach was separately examined. In the diagram which represents the dissected specimen the constriction is very plain, but before dissection the two segments of the stomach were lying in close apposition, and were to some extent adherent to one another. Had the constriction been recognised at the operation, it would have been necessary to establish a free communication between the two segments of the stomach either by gastroplasty or by gastro-anastomosis, as well as to connect the pyloric segment of the stomach with the jejunum. As it was, only the latter operation was done, and it obviously did not fulfil the requirements of the case. Von Hacker's method of gastro-enterostomy was employed. The posterior surface of the pyloric part of the stomach was found loosely adherent to the peritoneum behind it; and so it was necessary, in order to get a healthy peritoneal surface to work with, to go as far over to the cardiac end as possible. The intestine used was a coil of jejunum about 12 inches from the termination of the duodenum. The junction was made by stitching; two rows of continuous sutures were inserted; the external row involved the peritoneal and muscular coats only, whilst the internal one involved all the coats. The operation lasted about an hour.

After-History.

After the operation, the patient vomited repeatedly. She was much relieved by having her stomach washed out with saline solution, and she passed a comfortable night. On the following day her pulse became rapid and feeble. An infusion of 30 ounces of normal saline solution caused temporary improvement. Rectal feeds were given every four hours, and they were retained well throughout. On the evening of the day after the operation, the patient was given ½ ounce of the following mixture every hour by mouth: White of egg ℥j, brandy ℥j, water ℥iv; but as the vomiting returned it was discontinued. The patient was again relieved by washing out the stomach, and her pulse, which had again become feeble and rapid, was improved by the subcutaneous infusion of a pint of saline solution. Another attempt was made to feed the patient on the second day after the operation; this time half an ounce of milk and water was given every hour. Vomiting recurred, and the stomach feeding had to be discontinued. Washing out the stomach also failed to check the vomiting. On the third day the pulse improved, but the vomiting continued. The temperature ranged from normal to 100.8° F. On the fourth day the pulse failed again. Nothing that could be done was of any benefit, and on the fifth day after the operation the patient died.

Post-mortem Examination.

There was no sign of organic disease in the body, except in connection with the stomach. The artificial opening from the jejunum into the stomach was normal in appearance: the stitches were firm, and there was no peritonitis round the wound. The cause of death was not connected with any specific infection of the wound. The abdominal wound was also normal in appearance.

The stomach was greatly enlarged, and was found divided into two compartments by an hour-glass constriction separating the fundus from the middle and pyloric regions of the stomach. In addition there was stenosis of the pylorus. The condition is shown in the diagram (p. 1636).

The first constriction was extreme, and was about half an inch in width and a quarter of an inch in length. The mucous membrane on the œsophageal side was slightly puckered round the orifice of the constriction. It was smoother on the pyloric side. On the proximal side of the stricture there was a small ulcer passing irregularly through the orifice. The edges were not greatly thickened, but the ulcer had perforated the coats of the organ, producing externally in the position shown a small cavity completely enclosed and containing pus. The length of this cavity was a little over an inch. The mucous membrane of the first compartment of the stomach was generally thickened, especially near the stricture. There was hypertrophy of the muscular coat over about one-half of the compartment, starting near the orifice.

The second compartment of the stomach was much larger than the first. The pylorus was represented by a small opening, about a quarter of an inch in diameter. The connection of the pylorus with the duodenum was demonstrated only with great difficulty, but a careful dissection showed that the pylorus led into a greatly constricted first part of the duodenum, and also into a pear-shaped cavity, about 2½ inches long, which contained pus, and was surrounded by greatly-thickened connective tissue. The cavity was due to a perforation beyond the pylorus. This greatly-thickened wall was connected with a mass of cicatricial tissue, which firmly united it to the first part of the transverse colon. This was the mass noted at the operation. The mucous membrane of the colon was normal. There was general thickening of the mucous membrane of the second compartment of the stomach and uniform hypertrophy of the muscular coat.

The condition of things, therefore, was: (1) Hour-glass constriction of the stomach, with a perforating ulcer at the constriction and a small abscess outside; (2) extreme pyloric stenosis with perforation, leading to the formation of a small abscess and a large amount of cicatricial tissue just beyond the pylorus.

The artificial opening into the intestine had been made into the second compartment of the stomach, so that no relief to the symptoms was obtained.

COMMENTARY.

As regards the causation of the stomach condition, this may be considered under the heading of the causation of the hour-glass constriction and of the pyloric stenosis.

Causation of the Hour-Glass Constriction.

As regards the hour-glass constriction, the presence of a chronic ulcer at the spot might suggest this as a prime factor, chronic ulceration leading to the constriction. The small size of the ulcer, however, seems quite disproportionate to the great constriction produced, which was quite as if a tight cord had been tied round the stomach. Again, it might be thought that the constriction was congenital, and had been aggravated by the formation of a chronic ulcer. No adequate explanation appears to be forthcoming. It may be, however, that a chronic ulcer may in some cases excite a persistent contraction of the circular muscular fibres of the stomach, leading, with the formation of fibrous tissue, to a permanent stricture, a suggestion which has also been made for the causation of tight strictures of the rectum by small ulcers.

Causation of the Pyloric Stenosis.

The causation of the pyloric stenosis does not appear to have been due to an ulcer of the stomach. There was no ulceration in the second compartment of the stomach, and the mucous membrane round the narrowed pylorus was quite smooth. The constriction appears to have been due to something occurring beyond the pylorus, in the first part of the duodenum. It is probable that a small duodenal ulcer was the prime cause, the small perforation resulting causing the formation of a small abscess, and a large amount of cicatricial tissue between the pylorus, duodenum, and transverse colon.

Nutrition.

How the patient could have lived so long with so small an amount of food entering the duodenum is certainly remarkable. There was, as has been said, well-marked, but not extreme, wasting, and it is probable that the great constriction had not appeared until two years before death, as, up to that time, she had been taking ordinary food. To have sustained life at all, digested food must have been absorbed from the stomach, and that the functions of the stomach were not completely destroyed was shown by the large amount of free hydrochloric acid (0.3 per cent.) found in the vomited matters. Towards the end of her life, however, some bacterial fermentation had occurred, as shown by the presence of organic acids.

THE HARVEIAN LECTURES

ON

PROGNOSIS AND TREATMENT IN PULMONARY TUBERCULOSIS.

Delivered before the Harveian Society of London, November, 1900.

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[ABSTRACT]

LECTURE II.

WE must now discuss the effect of individual symptoms and complications upon prognosis in the first stage. The most important are pyrexia, general weakness, digestive disturbances, and hæmoptysis.

Pyrexia may be absent and this may be a favourable sign, but it is not always so. Its absence may be due to lack of protection or of reactionary power, and if with absence of pyrexia there be extreme general weakness and bacilli in the sputum the condition is grave. With general strength well maintained the prognosis is good, indicating that the attack is not powerful, the resistance good and not fully called forth. Leaving the general strength out of the question, one

may roughly say that the higher the pyrexia the worse the prognosis in this stage, and *vice versâ*. But it must also be remembered that neurotic patients may show a very high fever when nothing much is wrong, and in the absence of physical signs such a condition is confusing. Like enteric fever tuberculosis of the lungs may have a most turbulent outbreak and soon lapse into a very ordinary attack, and this without the presence of neurotism.

As shown by Dr. Kingston Fowler, a morning temperature higher than the evening temperature points to tuberculosis. It carries with it the more unfavourable prognosis. The condition is, however, rarely present. A morning temperature which is always above normal is unfavourable, whatever be the evening temperature. This refers to the mouth temperatures only.

General weakness is unfavourable, but especially cardiac and vasomotor weakness. These conditions indicate prospective lack of resistance and interfere with several methods of treatment.

Digestive disturbances also interfere with treatment. Attacks beginning with digestive disturbances as the only sign generally do badly. (These were further described).

Hæmoptysis in this stage need not cause great alarm, except as an element in the diagnosis. Repeated small hæmoptyses sometimes relieve a congested lung. Repeated copious hæmoptysis increases the gravity of the case. One single large hæmoptysis without pyrexia and without extensive lung signs is of no great importance, but one large hæmoptysis with pyrexia, carries with it a serious prognosis, if the diagnosis of tuberculosis be fully established. Hæmoptysis may be due to too high feeding, and then is not serious but beneficial. This is usually found in middle and late life.

The prognosis of the second stage, that of "progress," may be treated under the same headings.

The nature of the physical signs is of some importance, as indicating extension of the mischief. Pleuritic rubs are of little importance, so also are small *râles* or crepitations, but most important are the *râles* known as large, bubbling, resonant, metallic or consonant, but which I prefer to style echoing. They indicate softening of inflammatory tissue and echoing of the crackles thereby produced in very small cavities. The cavities cannot be diagnosed with certainty during life, though the condition is sometimes called "diffused cavitation." The sign means the giving way of the tissue and its addition to the signs of the first stage indicates extension of the action of the germ, and renders the prognosis less favourable.

The localisation of the physical signs is important, as indicating the spread of the infection. We must first inquire how such spread may take place from one point of infection to another point in the same or the opposite lung. The methods may be classified thus:

(*a*) Simple contiguity of tissue.
(*b*) Lymphatic absorption.
(*c*) Bronchial insufflation.
(*d*) Venous conduction.
(*e*) Arterial conduction.

(*a*) Extension by contiguity of tissue is estimated not so much by the area of consolidation as by the spread of the *râles* from the point of primary infection, the wider the spread and the worse the prognosis. The spread is greatly resisted by the boundaries of the lobes of the lungs, and is for a long time limited to the lobe of origin. Hence the importance of locating the boundaries of the lobes. When the lesion has thus passed the boundaries of a lobe the prognosis becomes worse, but such extension is generally by:

(*b*) Lymphatic absorption, which, no doubt, helps in extension by contiguity, as shown by sections of croupous pneumonia. But lymphatics are contained in pleural adhesions between the lobes, and thus assist in breaking down the natural barriers to extension. Lymphatic absorption helps in the spread of tuberculous mischief beyond the lung limits to the bronchial glands and still more remote parts. Such an occurrence marks a late stage of the disease, and is unfavourable.

(*c*) Extension by bronchial insufflation is most important. It is the cause of the caseous masses found in the middle of a lower lobe as secondary to an initial lesion in one of the upper lobes. Infected secretion from the initial lesion is drawn into the lower lobe by insufflation after cough. The detection of such a lesion during life greatly increases the gravity of the prognosis. It seems to occur on either side no matter on which side the primary lesion is situated, and the primary lesion may be so slight as to be easily overlooked, while the secondary lesion is very prominent. The malignity of the latter consists in its power of becoming a focus for further spread, and it generally advances more rapidly than the initial lesion.

(*d*) and (*e*). The circulation of blood through the lung is twofold. The pulmonary artery is the functional artery of the lungs, but the nutrient vessels are the bronchial arteries from the aorta. The bronchial veins carry blood from the lungs, possibly infected, back to the right heart to be once more sent through the lungs and possibly to reinfect them. Probably in this way numerous scattered patches in both lungs are produced and greatly increase the gravity of the prognosis.

Arterial conduction is called into play when blood which has once passed through the lungs and there infected, reaches the aorta and (driven through the bronchial arteries) once more reaches the lungs, producing the scattered patches already mentioned. Similarly tubercle of the meninges, kidneys, spleen, and so on is caused, and its prognosis is most unfavourable.

Extension to parts remote from the lungs is accomplished by the lymphatics and arteries as already stated, but mostly by the sputum after it has left the lungs. The most important extensions in this manner are to the:

(*a*) Larynx,
(*b*) Intestines,

for their presence greatly increases the gravity of the prognosis.

(*a*) Tuberculosis of the larynx is always secondary to a lung lesion, no matter how ill marked or even indetectable the lung lesion may be. (Reasons for this view and illustrations of it were given.)

(*b*) Infection of the intestines is caused by swallowing the sputum. It affects the parts where the poison is most easily caught, and can lie the longest undisturbed, and is therefore most common in the vermiform appendix and the lower part of the ileum. Its symptoms are well known, and are nearly always precursors of the end.

Only two symptoms are in this stage of much use in prognosis, namely pyrexia and hæmoptysis.

The second stage is never without pyrexia. The higher the fever and the worse is the prognosis, but worst is hectic fever with differences of possibly eight degrees between morning and evening temperatures.

Hæmoptysis is a much graver symptom in the second than in the first stage, and may be dangerous. It is due to ulceration of a blood vessel. Its dangers are:

(*a*) Loss of blood.
(*b*) Shock with cardiac failure.
(*c*) Fright.

General weakness, emaciation, night sweats, etc., are of some, but not of great, value in prognosis.

The third stage or "result" must be considered in two phases—"cavitation" and "fibrosis"—which may be almost entirely separate or more or less combined. Given that a cavity is present, then the more highly-pitched its percussion note and the more resistance there is to the percussing finger, and the more favourable is the prognosis, since these conditions mean a thick fibrous wall to the cavity. Echoing *râles* indicate a further progress of the disease, a combination of second and third stages, and are unfavourable.

In this stage dyspnœa is of prognostic value. In cavitation it is due mostly to loss of lung tissue, but in fibrosis mostly to interference with the suction of blood into the right side of the heart, from deficient inspiratory expansion. Dyspnœa is greater in fibrosis than in cavitation, but carries with it a more favourable prognosis when present in the former condition.

Failure of circulation should be carefully watched for in the third stage, for its occurrence is very dangerous. Pneumothorax is dangerous because of producing shock and even sudden death, but when this risk is passed its prognosis is not very unfavourable. It is the more common in cavitation.

Hæmoptysis is the great danger of the third stage of pulmonary tuberculosis, and is often fatal. If in copious amount it generally proceeds from rupture of an aneurysm of the pulmonary artery in a cavity. (A collection of such aneurysms was shown.) The aneurysm is produced

by negative pressure in the cavity produced by relief of its walls after compression during cough. They may easily be ruptured by violent percussion, and may be present in only small cavities. Fatal hæmorrhage, by reason of the presence of these aneurysms, is more common in cavitation than in fibrosis. On the whole, the prognosis is more favourable in fibrosis than in cavitation.

For many years after quiescence has set in there is risk of further outbreak by reason of reinfection from concealed tubercle.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A CASE OF SCARLATINA PEMPHIGOIDES.

In reference to the interesting case of scarlatina pemphigoides related by Dr. Somers in the British Medical Journal of November 3rd, it may be of interest to state that a case of a very similar nature occurred in my practice in the third week of April last.

The patient was a married man, having a family of five young children, whose ages ranged from 12 to 3 years, all of whom were attacked by the disease in a mild form, and recovered from it without any complication. The mother was the only member of the family who did not contract the disease.

The father's case was the last of the sequence, and presented no unusual features up to the fourth day of the rash. From this date, however, the eruption became, especially on the flexor aspects, vesicular; and the vesicles rapidly coalesced and formed large bullæ, which burst soon after, and gave to the skin a look as if it had been badly scalded. The appearances of the front of the chest and abdomen, and also the flexor aspects of the arms and thighs during the process of repair was very interesting, the shrivelled epithelium being thrown into roughly-circular folds over the bullous areas, and mingled here and there with drying pus, giving it a marbled appearance. The febrile symptoms gradually subsided with the inflammatory symptoms in the skin, but they were unduly prolonged by this peculiar outburst.

I ascribed the bullous eruption to the fact that the patient did not go to bed during the attack, or even report himself ill. I first saw him when the vesicles were beginning to form; and he said he was suffering from great irritation over the chest and abdomen, and scratched himself freely to relieve it. There is no doubt that in this case the friction of the clothes was largely responsible for the superadded skin affection, and I greatly doubt its origin from any such cause as double infection.

Ash, Dover. E. A. C. Baylor, M.D Dub.

ANEURYSM BURSTING INTO PERICARDIAL SAC.

History.—T. W., a stevedore, aged 32, had been under my observation for some years for occasional dilatation of a bad stricture of the urethra. On September 27th he consulted me for that purpose, but as he complained of pains in the chest I did not pass the sound. I examined his chest carefully, but found nothing abnormal on percussion or auscultation. The pains were much better in a few days. On October 11th he complained of having caught cold and a recurrence of the pains. I again carefully examined his chest, and found nothing abnormal. I ordered him home to bed, and told him to send if he became in any way worse. On October 13th he went to work feeling quite well, and so he continued until October 15th, when he died in bed at 7.30 A.M., giving a cry of pain.

Post-mortem Examination—On opening the chest the pericardium was seen to be much distended, fluctuating, and very blue in appearance. It was full of soft blood clot. A small aneurysm of the ascending aorta, about the size of a walnut, was found in the pericardial sac. This had ruptured somewhat posteriorly.

Remarks.—I consider it impossible to have diagnosed it during life, owing to its position so near the heart and its small size. The valves of the heart were healthy and the organ slightly hypertrophied, but otherwise healthy. The lungs, kidneys, and all other organs were normal. The patient had had syphilis some years earlier.

Bristol. John Wm. Taylor, M.R.C.S., L.R.C.P.Lond.

FOREIGN BODY LONG RETAINED IN THE EXTERNAL AUDITORY MEATUS.

I think a parallel case to that reported by Mr. Benson under the title Foreign Body Twenty-five Years in the External Auditory Meatus may be interesting. An old lady, 78 years of age, had complained more or less for thirty years of deafness in her left ear, which, as far as she could remember, had come on quite suddenly. I found the ear full of wax, and advised syringing; which I proceeded to do. After one or two large pieces of the hardened wax had come away, I was considerably astonished to find a small round ball about the size of a pea discharged from the ear into the basin. This, on examination, proved to be a piece of tortoiseshell, which had broken off from one of the ornamental combs she used to wear over thirty years previously.

The tympanic membrane was thickened and slightly vascular. After using Politzer's bag twice, the hearing was almost normal in the ear in question.

St. Boswells, N.B. Wm. L. Cullen, M.B.Edin.

A CASE OF CONGLUTINATIO ET ATRESIA ORIFICII UTERI DURING PARTURITION.

In July last I was called in to see a Chinese woman, who, it was stated, had been in labour for three days. The Malay and Siamese midwives who were in attendance informed me that although the pains had been strong and regular the child had ceased to descend after the first day. The parturient woman appeared to be a well nourished robust young woman. She had had three children, and in all three labour had been normal.

On palpation uterine contractions were distinctly felt; the head was fixed, and the fœtal heart was distinctly audible below the umbilicus on the left side. After much opposition on the part of the patient vaginal examination was sanctioned. The head at every pain appeared to descend, pushing the anterior vaginal wall forwards and downwards, and rendering it so tense that I at first mistook it for the distended bag of membranes. I then endeavoured to feel for the os, which was represented by an irregular narrow groove facing the hollow of the sacrum. I inserted the tip of the finger into the groove, and with a little manipulation I was able to enlarge the opening by tearing away some adherent tissue by which agglutination of the margins of the os had taken place.

Once released the os rapidly enlarged, the membranes ruptured, and labour terminated within two hours from the time I saw the patient. The child had evidently been subjected to great pressure, as a large quantity of meconium came away soon after the membranes had ruptured.

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DISLOCATION OF THE STYLOID PROCESS.

Several references have appeared lately in the British Medical Journal to a condition of the throat described as dislocation of the styloid process.

The diagnosis seems to have chiefly rested upon the recognition by palpation of a hard, movable body in the lateral wall of the pharynx.

The existence of the subpharyngeal cartilage of Luschka seems to have been overlooked. This structure is by no means rare, and from the frequency of its occurrence I am inclined to think that this body was probably mistaken for a displaced styloid process. The cartilage occurs not only in the lateral wall of the oro-pharynx, somewhat behind and below the faucial tonsil, but also in the tonsil itself, which I have often verified by microscopic examination, attention having been drawn to it by experiencing an exceptional resistance to the guillotine. It consists of hyaline cartilage embedded in a capsule of white fibrous tissue, and is supposed to be a vestige of the third post-oral arch.

Devonshire Street, W. Wyatt Wingrave, M.D.