SYMPTOMS AND SIGNS.

The following symptoms and signs were found in patients who were unfit. Cough was invariably an early symptom, aggravated by cold and damp weather, and tending to become worse year by year; very marked liability to take cold was one of the most prominent features of the condition. If the cough became persistently paroxysmal a definite dilatation of the bronchioles was to be assumed. Slight breathlessness on exertion, and in advanced cases slight cyanosis, with parrot-bill clubbing of the fingers, pointed to right heart embarrassment. Contrary to the prevalent opinion, we found that the clubbing tended more to the early "parrot-bill" than the "drumstick" type. The sputum was scanty in quantity without characteristic peculiarity, unless bronchiectasis had intervened. The disease was almost always unilateral. The configuration of the thorax was often affected, there being slight scoliosis with narrowing of the interspaces and drooping of the shoulder; retraction to a degree indicating extensive pleural adhesion was not observed in any instance, nor was the heart markedly displaced. Respiratory movements and sounds were diminished over the diseased lung, and adventitious sounds were occasionally present. X-ray investigation following lipiodol injection into the bronchi would have been desirable, but was impracticable on account of the patients' daily routine; radiograms were taken in some cases.

TREATMENT.

Without entering closely into details we would like to point out that certain indications are clear, of which the need of more efficient prophylaxis is the most prominent. Broncho-pneumonia (whether so-called primary or secondary to measles and whooping-cough) is well known to be the cause of a large number of deaths in childhood, but it is not so generally recognized that as a persistent sequel of these infections it leads to the disability which is the subject of this investigation. Too much emphasis, therefore, cannot be laid on the after-care of cases of measles and whooping-cough. In the treatment of incomplete resolution attempts must be made to reventilate the sclerosed areas by means of breathing exercises; patients are now being treated in this manner at Brompton with very beneficial results, but it is as yet too early to speak of permanent benefit. In early cases reventilation and expansion of lung are desirable, but where bronchiolar dilatation has occurred and appears to be becoming permanent, natural or artificial methods of reducing the size of the thoracic cavity to allow for the ensuing cicatrization should be considered. If the child is young enough the chest wall will probably retract sufficiently for some degree of compensation; but when the thorax is too rigid more radical measures—artificial pneumothorax, phrenicotomy, or more extensive surgical measures—may be indicated. Failing employment of such procedures, permanence of signs and symptoms may be expected, and treatment can only be symptomatic.

Illustrative Cases.

GROUP I.

A boy, aged 5½ years. Whooping-cough one year previously, since when he was never really well; persistent cough. Examination showed impaired percussion note, weak breath sounds, and crepitations at the right base. The patient attended for six months, at the end of which time the signs were still persisting.

Re-examined aged 21. Has been very well for many years, and is able to do heavy work. All physical signs completely cleared up.

A boy, aged 11. Measles two years previously, followed by "pneumonia," since when he had had constant cough and sputum. Examination showed impaired note, weak breath sounds, and râles at right base. Diagnosed as fibrosis of lung. Signs did not clear up.

Re-examined aged 23. Now perfectly well, working. Signs no longer present.

GROUP II.

A girl, aged 7½. Measles and whooping-cough three years previously, since when frequent cough. Examination showed rhonchi and crepitations at both bases. Attended for seven months; signs did not clear up.

Re-examined aged 22. Healthy-looking woman; feels well and is able to work. No cough or sputum. Impaired note, weak breath sounds, and post-tussive crepitations at right base.

A girl, aged 7½. Whooping-cough three years previously, since when persistent cough. Examination showed impaired note, weak

breath sounds, and crepitations at right base. Diagnosis—? early bronchiectasis. Signs persisted during attendance.

Re-examined aged 23. Has been quite well for years. Able to work. Signs as before. No cough or sputum. Not subject to colds.

GROUP III.

A girl, aged 5. Measles one year previously, since when cough and dyspnoea. Examination showed numerous crepitations at the left base, and these persisted during six months' attendance.

Re-examined aged 24. Pale, muddy complexion. Always has cough and about half an ounce daily of non-offensive sputum. Exacerbation of symptoms occurs every two to four months, necessitating retirement to bed. Able to work between attacks, but not completely fit.

A boy, aged 12½. Measles and whooping-cough two years previously, since when persistent cough. Examination showed weak breath sounds and coarse râles at the right base.

Re-examined aged 20. Always has cough with slight amount of sputum. Frequent colds, able to work, but not completely fit. Signs as before.

GROUP IV.

A boy, aged 8½. Measles followed by whooping-cough when 6 months old, since when persistent cough. Examination showed coarse râles at both bases. The child never coughed up any sputum, but the signs did not clear up.

Re-examined aged 13½. Typical bronchiectasis with offensive sputum, confirmed by x-ray examination.

A girl, aged 6. Whooping-cough one year previously, since when persistent cough. Examination showed numerous crepitations at the right base. Diagnosis—? bronchiectasis.

Re-examined aged 14. Typical bronchiectasis with offensive sputum.

CONCLUSIONS.

1. Pulmonary fibrosis of non-tuberculous origin frequently produces grave disability and seriously reduces the subject's economic efficiency; on the other hand, a reasonable proportion establish an "immunity" and labour under no apparent disadvantage.

2. Pulmonary fibrosis is a not infrequent consequence of the protracted form of broncho-pneumonia which follows measles and whooping-cough.

3. Protection against measles and whooping-cough in the first five years of life would tend to prevent its incidence.

4. Apart from prophylaxis, amelioration, if not absolute cure, may be expected by improved methods of treatment.

It will be noted that we have used the term "pulmonary fibrosis" throughout as a label for the condition, but this is not altogether satisfactory, and there would appear to be a distinct need for an official discussion with a view to determining the nomenclature.

Our thanks are due to the honorary staff of the Brompton Hospital for permission to make use of their records, also to the lady almoners for their assistance in tracing cases. For suggestions and advice we are indebted to Drs. G. E. Beaumont and W. H. Lister.

REFERENCE.

¹ *Lancet*, March 24th, 1928.

SOLITARY ULCER OF THE BLADDER.

BY

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It is a matter of some interest that a review of the literature on general and urinary surgery reveals the fact that this condition is enshrouded in a certain degree of obscurity. In some works the disease fails to be identified as a clinical entity from other varieties of chronic ulceration, in others it is not even mentioned. Certain well-known writers, on the other hand, give the subject considerable attention and description under titles which appear to be synonymous.

Rowlands and Turner (1927) describe the chronic or callous ulcer of the bladder, which occurs nearly always in young men, but occasionally in women who have borne children. Haematuria is a fairly constant symptom. The condition was mentioned by Fenwick in 1900,¹ and again in 1904.² V. C. Hunt³ discourses on submucous ulcers of the bladder, advises their excision, and the treatment of septic foci affecting the tonsils, teeth, nasal sinuses, etc.

Cabot describes a solitary ulcer that may be either acute or chronic. He mentions also an elusive ulcer that occurs chiefly in females and is associated with great frequency of micturition but without haematuria.

Frank Kidd, in his work on urinary surgery (1910), gives a clear and concise description. The causes of simple ulcer are classified as consecutive, spontaneous, and symptomatic; the consecutive variety being due to mechanical pressure of foreign bodies, stones, etc., the spontaneous due to bacterial infection of the bladder wall, and the symptomatic occurring in the course of diabetes or disease of the nervous system.

The second variety, which is the type under present discussion, is subdivided into acute perforating and chronic solitary. It will thus be seen that the nomenclature and description of this disease are somewhat varied, and that a brief account of its etiology, pathology, and clinical features may be of interest before relating a case which was sent to me some months ago.

Etiology.

This is not clearly understood. There is evidence in some cases of a toxic focus, such as pyorrhoëa, septic tonsils, or sinus infection. Haematogenous infection is regarded as the probable cause. Comparison is made with the theory of gastric ulcer from infective emboli through the blood stream. The patients are usually young males with no antecedent urinary trouble or venereal history.

Pathology.

The ulcer is single, submucous, and shallow. In time it penetrates the muscular wall, and, in rare cases, the entire wall of the bladder, with subsequent infection of the pelvic cellular tissues or peritoneum, according to the site of the lesion. Cystitis appears before long, and the ulcer becomes encrusted with phosphatic debris. The ulcer is usually half to three-quarters of an inch in diameter. It is situated most frequently on the posterior wall, above and internal to the ureteric orifice. The margin is slightly raised; the base is somewhat shaggy and covered with fibrin or blood clot with, perhaps, some phosphatic encrustation.

Clinical Features.

The early symptoms are increased frequency of micturition and intermittent haematuria. Later the haematuria becomes more persistent and profuse, with strangury and pain referred to the penis. The general health becomes undermined in a very short time, with loss of weight and a moderate degree of anaemia. The symptoms of cystitis are superadded.

Differential Diagnosis.

Examination by cystoscopy will, of course, localize the source of the haemorrhage, and the ulcerated area found in the bladder must next be differentiated from tubercle and neoplasm. Bleeding may be so profuse during instrumentation as to make visibility difficult or impossible. Suprapubic cystotomy, for diagnostic as well as curative purposes, may have to be performed. Repeated bacteriological examination of the urine is made to eliminate tubercle. Coliform infection should be identified by the same means. Adherent blood clot at the site of the ulcer may lead to the suspicion of malignant growth, especially when cystitis is present.

The diagnosis is confirmed finally by the microscope. A section of the ulcer shows chronic inflammatory tissue near the edge, with new blood capillaries, and organized blood clot covering the base.

Treatment.

Palliative measures are not, as a rule, satisfactory. Curettage of the ulcer, and caustic applications, through a suprapubic opening, have met with varying success. Treatment by diathermy through the cystoscope is successful in early cases. Resection of the ulcer is the most satisfactory method. It should be done early. The presence of cystitis necessitates preliminary drainage with all the attendant difficulties of a second operation later. An ulcer situated in the trigone is best dealt with by the cautery.

Case of Solitary Ulcer: Partial Cystectomy: Cure.

A youth, aged 15, noticed blood in his urine during the afternoon of June 10th, 1927, following exercise at rowing earlier in the day. At night the urine was clear. The next morning blood was again present, but passed off towards the evening. The haematuria was painless and recurred each day. On June 17th,

as the condition was not improving under medical treatment, I was called in consultation by his doctor with a view to further investigation. His parents declared that he had looked tired and thin for the past two or three months. He had always been delicate since childhood. He was, however, a keen athlete, and played regularly at cricket or football, and was fond of rowing.

Past Illnesses.—He had tonsillitis and quinsy when 3½ years old, tuberculous glands in the neck, which were removed by operation, when he was 7, and typhoid fever at 8 years of age.

Present Condition.—He was pale, of muddy complexion, thin but wiry, and intelligent. Temperature and pulse were normal; blood pressure, 110 mm. Hg. The amount of blood in the urine was variable each day, at times half to a third of its bulk, at others almost clear. The haematuria was symptomless, but later he complained of frequency of micturition and a feeling of discomfort at the base of the penis. The urine was free of casts, bacteria, and, apart from blood, showed no other pathological cell elements. The urea concentration test indicated good renal efficiency.

Cystoscopy.—This had to be performed on three occasions on account of persistent bleeding. It was only on the third examination that a clear view was obtained. The ulcer was situated above and to the outer side of the right ureteric opening. Its size could not be clearly ascertained as it was only partly visible, but after operation it was found to be about three-quarters of an inch in diameter. There appeared to be a small pouch or depression of the wall surrounding the ulcer, over the edge of which several streams of blood could be seen trickling downwards like a cascade or waterfall.

Operation.—On July 8th I explored the bladder. The ulcer was bleeding freely; it was the size of a sixpence, but well clear of the right ureter. I resected a portion of bladder wall including the ulcer—approximately one and a quarter inches by one inch—closed the bladder, and drained by a suprapubic tube for a few days. The prevesical space was drained also.

Convalescence was normal. At the end of three weeks the wound was quite healed and the patient passed water naturally. On July 28th he left hospital.

During the following two months the urine was examined at weekly intervals and was found normal and free from blood on each occasion. There was no pain or frequency complained of at any time.

Before operation his weight was 6 st. 9 lb. On September 27th, two and a half months after operation, he weighed 8 st. He was then looking well, with a fresh and healthy colour, and stated that he felt better than he had done for several months. He was taking moderate outdoor exercise.

Pathological Report (from the Clinical Research Association).—“The section shows a superficial ulceration covered with partially organized blood clot. The epithelium is represented by a very small compressed fragment. There is inflammatory infiltration, but no sign of tuberculosis.”

REFERENCES.

¹ Ulceration of the Bladder. ² Clinical Cystoscopy. ³ Collected Papers of the Mayo Clinic.

LARYNGEAL DIPHTHERIA IN OLD AGE.

BY

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LARYNGEAL diphtheria is rare at any period of adult life, and becomes increasingly so with advance in age. In a paper published some years ago¹ I illustrated this by the fact that my experience had been limited to four examples of the kind among 1,156 cases of laryngeal diphtheria, with or without faucial and nasal involvement, admitted to hospital between August 17th, 1899, and December 31st, 1915, during which period 11,313 diphtheria patients of all ages were admitted, 821 being aged 20 years and over. Of the four cases, three of which were fatal, the youngest was aged 24 and the eldest 45.

The present case is remarkable for the much greater age of the patient, and is, as far as I can recall, the oldest example of diphtheria that I have seen, with the exception of a moderate faucial attack in a woman aged 94, recorded by G. W. Ronaldson in this *Journal*.²

The patient was a woman, aged 76, who was admitted to hospital on March 20th on the sixth day of disease. On admission the tonsils and uvula were covered with membrane, which was also visible on the tip of the epiglottis. The cough was croupy and the voice was lost. A culture of diphtheria bacilli was obtained from the throat. An intramuscular injection of 24,000 units of antitoxin was given on admission and repeated on the following day. No other active treatment, local or general, was employed, and rapid disappearance of the membrane and laryngeal symptoms took place. No complications ensued, apart from a trace of albumin in the urine from the tenth to the twelfth day, but in view of the severity of the attack and the likelihood of subsequent paralysis it was considered advisable to keep the patient in bed till the forty-second day. On her discharge from hospital on the fifty-sixth day she showed no sign of paralysis and the knee-jerks were active.