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.

Apart from the rarity of laryngeal diphtheria in advanced life the case is of interest in the following respects. The pernicious doctrine which has received support in two of the most recent textbooks on diseases of the throat—that antitoxin is of no value after the fifth day of disease—is falsified by the rapid subsidence of the symptoms after injection of the large doses which the patient received. The absence of any serum reaction was due partly to the use of a refined serum and partly to the fact, which I have illustrated on several previous occasions, that serum reactions are often absent or ill marked after severe angina in spite of the administration of large amounts of serum.

Recovery was all the more remarkable as the prognosis of laryngeal diphtheria in adult life is usually unfavourable.

Lastly the case is an excellent example of what C. Zoeller,³ who has recently recorded an attack of laryngeal diphtheria in a middle-aged man, describes as the "caprices of spontaneous immunization."

The great majority of town dwellers—especially those in capitals such as London and Paris, where diphtheria is endemic—undergo a process of occult spontaneous immunization, and only a comparatively small minority contract the disease. In some cases, however, this process of spontaneous immunization does not take place. Zoeller's patient was a colonel aged 50, who, in spite of the fact that he had been living in Paris and other communities where diphtheria was prevalent, had not become spontaneously immunized, but had contracted an attack of isolated laryngeal diphtheria followed by extensive paralysis, the laryngeal involvement being attributed to the fact that he was a heavy smoker.

In my patient tobacco could be excluded, and the involvement of the larynx was merely due to the natural course of the disease.

REFERENCES.

- ¹ *Clin. Journ.*, 1916, xlv, 389. ² *British Medical Journal*, 1925, i, 733. ³ *Bull. et Mém. Soc. Méd. Hôp. de Paris*, 1928, lvi, 426.

TREATMENT OF FRACTURES OF THE CLAVICLE.

BY

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IN the *British Medical Journal* of April 28th (p. 723) there was a comment on the treatment of fractures of the clavicle, with a reference to modifications of the usual Sayre's adhesive plaster method. Whatever variant be employed, adhesive plaster condemns a strong hairy man to a month or so of mild purgatory, and inflicts on the more tender skin of a woman or a child an irritation that is wellnigh intolerable; over the scene of the final removal of the plaster it is better to draw a veil.

In the majority of cases of fractured clavicle the fracture is situated somewhere within the inner two-thirds. Leaving out those rare and troublesome fractures close up to the sterno-clavicular joint, and those near to the acromio-clavicular joint, which present special problems in treatment, these fractures can be adequately treated by the padded ring method. This is no new idea, but the rings which I have used for the past two years in hospital and private cases are, I believe, an advance on previous devices. The rings are made of wash-leather tightly packed with wool, and having incorporated with the wool a spring. They have been made for me by Mr. Walgrove, of 4, Hurdwick Place, Harrington Square, N.W.1.

The method of application is important. The anterior strap of webbing is drawn sufficiently tight to keep the anterior part of the ring in the sulcus internal to the head of the humerus, so that on pulling back the rings pressure backwards is made on the outer fragment. The strap is fastened to the ring on each side by a stout safety-pin, and should then lie across the chest above the level of the mammae. Two straps are used behind, and are drawn up as tightly as comfort will allow; they also are pinned to the rings. Generally it will be found that on the next and

succeeding days the patient will tolerate further shortening of the posterior straps. When the rings are efficiently adjusted the arm of the affected side is placed across the front of the chest with the hand pointing towards the opposite shoulder, and loosely fixed there by any convenient method—bandage or sling. The thickness of the ring acts as an axillary pad, giving leverage outwards of the outer fragment.

I have found this method far more effective than any plaster method for the majority of cases, and as to comfort there is no comparison. In a busy out-patient department the saving of time is considerable. It is so simple that nurses quickly learn how to adjust the rings, and the patient only needs inspection by the surgeon before being allowed to go home. One young amateur jockey with a comminuted fracture found himself so comfortable that at the end of a fortnight he could ride at full gallop without discomfort—needless to say, without the surgeon's permission.

From the illustrations it will be seen that the appliance leaves free the breast in the female, neither pressing on nor irritating that organ. Usually it will be found that the most effective leverage is secured by tightening the upper strap behind, while the lower strap is only drawn sufficiently tight to counterbalance the pull of the anterior strap.

In the earlier rings made for me I tried a covering of rubber sheeting, but this soon perished; it was more expensive, it gave less secure purchase for the safety-pins, and caused unpleasant sweating in the axillae.

PYREXIA DUE TO INFECTED DEAD TEETH.

BY

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THE following three cases are interesting examples of a prolonged fever arising from apical abscesses, and they have several features in common—namely:

1. The fever was considerable and of long duration in each case, and terminated at once on extraction of the infected tooth or teeth.

2. In none of the cases is it known when the fever began; so it may have been of much longer duration than is shown by the charts.

3. All three patients complained only of vague ill health; they had no pain and there were no symptoms pointing to any known disease. In Case I I had the patient's temperature taken most carefully to make sure that she was not malingering. In Case II the patient protested that he felt well enough to be in his shop and resented being kept in bed. In Case III the patient refused to remain in bed after two weeks and returned to his business.

4. In all three cases the discovery of the lesion was made by a radiologist. In Case I a solitary abscessed tooth was seen by the radiologist in skiagrams taken of the nasal sinuses. In Case II the abscessed stump was completely covered by clean healthy gum. In Case III the abscessed teeth were discovered amongst several root-filled teeth by the radiologist.