brilliant glare. Thinking out the matter, I came to see that it (the glass window), being in a dark cavity, acted as a reflector, and simply sent back the light. In fact, I realised that I was like a person who, candle in hand, looks out of window into the dark. All that can be seen under such circumstances is the image of the candle itself. Ultimately, by setting the window at a slight angle (15 degrees) to

the direction of the illuminating rays, I eluded this difficulty and saw all clearly. Next I set to work to find a means of examining the neck of the bladder. For this purpose I devised the speculum figured B. In it the short curve is solid, and just where it commences a lateral window is set, at a proper angle to evade the difficulty already described, and placed opposite a little mirror. The position of the window is indicated by a projecting flange at the outer end of the speculum. A glance at the accompanying woodcut, B, will make these details intelligible, and explain how, when this speculum is rotated in the bladder, whilst jointed into the illuminating tube of my endoscope, bit by bit the neck of the bladder comes into view. With these specula and my lantern I am thus able to take a complete survey of the whole interior and of the neck of the bladder. With the other specula described in my paper (already quoted), the urethra, rectum, uterus, ear, and, in fine, all cavities into which a tube can be introduced—such as the pleural sac in cases of effusion, abscesses, wounds, &c.,—may be thoroughly examined. I may refer those interested in the subject to

my paper of 1865, and to a short article which I wrote a few years ago for Mr. Heath's "Dictionary of Practical Surgery."

In conclusion, I ask indulgence for this Rip-van-Winkle revival of the labours of my youth, adding my very earnest congratulations to the present generation of endoscopists, and especially to Mr. Hurry Fenwick. His recent classical monogram places the English reading public abreast of the latest improvements, and shows what can be done, and is being done, by advancing science in this department.

Dublin.

ON HYSTERICAL MOTOR AFFECTIONS OF THE VOCAL CORDS.¹

By JAMES B. BALL, M.D., M.R.C.P.,

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IN presenting this sketch of the motor troubles which affect the vocal cords in hysteria, I wish to say, at the outset, that, whatever objections may be offered to the term "hysteria," I feel it is one that is thoroughly well established and understood. The group of affections associated with that special morbid condition of the nervous system universally designated hysterical is quite familiar to all of us; I shall therefore offer no definition of the term, and shall not discuss the advisability of substituting for hysteria such alternative terms as "neurasthenia," "neuro-minesis," or "functional disease." Among the commoner manifestations of hysteria are those affecting the motor functions of various parts of the body, and these manifestations take the form of impaired movement, paresis or paralysis, of exalted movement or spasm in some form, or finally of such perversions of movement as may be classed

under the head of incoördination. It might, therefore, seem that, in reciting the motor affections of the vocal cords in hysteria, I could not do better than endeavour to range them under one or other of these heads, and consider each form according as a muscle, or a group of muscles, was affected in one or other way. And no doubt, for the purpose of scientific classification, this method would be the most desirable. Since, however, I am anxious to present these affections as they are met with in the routine of practice, characterised by certain prominent symptoms, dependent on derangement of some important function, I rather prefer to consider them now in relation to the special function deranged.

The vocal cords, forming as they do the greatest part of the boundary of the glottic aperture, and being subject to variations of position and tension, under the control of various muscles, are concerned in two important functions—viz., respiration and phonation. In respiration, as the air passes to and fro, the cords recede from each other, widening the glottis, during inspiration, and approach towards each other, narrowing the glottis, during expiration. In phonation the cords are closely approximated and made tense. In accordance with these two functions of the glottis, the motor disturbances of the cords met with in hysteria may be conveniently considered. Through perverted action of the muscles which abduct and adduct the vocal cords, the glottic aperture may be so narrowed as to offer an impediment to the due passage of the respiratory currents, causing dyspnoea, or through perversion of these same muscles, or of those which regulate the tension of the cords, an impediment is offered to normal vocalisation, causing dysphonia or aphonia. Phonation is more frequently affected than respiration. Loss of voice is, indeed, a common and familiar hysterical symptom. Nor is it surprising that the voice, which is the principal channel for the expression of the emotions, should be frequently affected in a disease like hysteria, so largely dependent on emotional states. Loss of voice in hysteria is sometimes merely voluntary, the patient, owing to a general hyperæsthetic condition, habitually speaking in a whisper, although able to phonate. More often, however, there is real inability. The onset of aphonia is usually sudden, and often follows some psychological excitement. The loss of voice may be complete, the patient being unable to speak other than in a whisper; or the voice may be merely weak, rough, or hoarse. In some cases the loss of voice is intermittent, periods of complete aphonia alternating with periods of normal or impaired voice. The voice may come back as suddenly as it went, and not unfrequently too under the influence of fright or sudden emotion. During sleep the completely aphonic patient may cry out loudly in a natural voice. A sound of perhaps normal loudness will generally, though not always, accompany a sneeze or a cough, and this whether the cough be a voluntary or a reflex act. When excited to laughter, the patient may laugh with an audible vocal sound. More striking still is the fact that the patient who cannot utter a sound in speaking may be able to sing perfectly well. In the case of a young lady with marked hysterical aphonia, whom I saw some time ago, and who had been unable to speak or sing for some months, the power to sing returned suddenly on hearing a younger sister making a poor attempt at one of her favourite songs. The patient pushed her young sister from the piano and sang the song herself. After this she could always sing, but the speaking voice did not return for several weeks. In exceptional cases the patient may be unable to speak even in a whisper, not being capable of performing the necessary movements by which articulation is effected. Merely a vague movement of the lips takes place on attempting to speak. The laryngoscopic appearances of the movements of the cords, in the forms of aphonia above mentioned, though somewhat variable, are, on the whole, characteristic. Imperfect approximation of the cords is the constant feature. In a marked case, on the patient's attempting to phonate, the cords remain perfectly immovable during the attempt, or approach each other only slightly, all the adductors more or less refusing to act; or the cords may approach each other more or less perfectly in their anterior two-thirds, and leave a triangular space open behind, the transverse arytenoid muscle not acting; or an elliptical space may be left between the approximated cords, indicating imperfect action of the tensor muscles. In some rare cases a different state of things exists. Dr. Bristowe, in his Cavendish Lecture in 1885, related the case of a hysterical girl suffering from aphonia, with inability to

¹ Read before the West London Medico-Chirurgical Society, Dec. 7th, 1888.

whisper. Here Dr. Semon reported that, on attempting to phonate, the cords came together well. There was no inability to move the vocal cords or the tongue or lips, but, as Dr. Bristowe remarked, some inability to act, on the part of the centres which regulate the complex group of actions that subserve phonation and articulation.

There is a rare form of hysterical aphonia which has some differences in its clinical features from the cases ordinarily met with, and differs also in the method of its production. While in ordinary cases of aphonia the patient makes little or no real effort to speak, in this form the striking feature is the very marked and sometimes painful efforts made by the patient to get out the sounds. The words may be got out with difficulty or in a falsetto voice, or no vocal sound whatever may be produced, notwithstanding the efforts of the patient. It is obvious that the patient has difficulty in getting air to pass through the glottis while attempting to speak, and the strong expiration which usually follows the attempt indicates that the glottis was closed. The laryngoscope shows this to be the case. The vocal cords move normally on respiration, but on attempting to speak they close together spasmodically, perhaps even overlap, and either exclude the passage of air altogether or only allow a little to pass through a narrow triangular opening at the posterior third. The condition is known as aphonia spastica. It is analogous to writer's cramp, in that a particular action brings about spasm of the muscles concerned, but it may occur as a purely hysterical phenomenon.

Passing now to the respiratory troubles, or laryngeal dyspnoea of hysterical origin, the first form to be mentioned is that sudden closure of the glottis which is complicated with a general hysterical convulsion, and causes complete arrest of the respiration for several seconds. It may terminate with a loud stridulous inspiration. Such a closure of the glottis may entirely replace a general hysterical convulsive attack. This form need not be dwelt on further. More chronic and less complicated forms of glottic constriction are of greater interest. In a common type of the malady the attack of dyspnoea occurs suddenly, perhaps after some emotional excitement. Inspiration and expiration are loud and stridulous, inspiration being generally the louder, and sometimes having a crowing character. At times the dyspnoea increases and may present most urgent symptoms. The stridor, cyanosis, and muscular action attest the severity of the struggle for breath. The breathing is often very hurried, hysterical rapid breathing, in that respect contrasting with the measured, laboured, breathing of organic laryngeal obstruction. Very often the voice is weak, or complete aphonia may exist. In other cases phonation is good. The dyspnoea may persist with remissions and exacerbations, sometimes with complete intermissions for days, weeks, or months. It ceases entirely during sleep. In certain cases the dyspnoea is purely inspiratory, expiration being quiet and easy. In this form it sometimes happens that the dyspnoea occurs only, or chiefly, on exertion or excitement—that is, when the respirations are more deep than usual. In some patients the attacks of stridulous breathing are of a more paroxysmal character. At varying intervals of minutes or hours, attacks of stridor and more or less dyspnoea occur, inspiration here also being often loud and crowing. After a few stridulous respirations the attacks cease, to recur again at varying intervals. The paroxysms occur without apparent cause, or may be excited by emotion, sometimes by coughing or swallowing. Many other variations will be met with in hysterical stridulous attacks. In the case of a girl aged thirteen, presenting other hysterical phenomena, whom I saw a short time ago, the attacks at the period I saw her had a very peculiar character. Each attack was preluded by facial twitchings, and then came three or four extremely loud inspirations, which were in reality loud piercing inspiratory screams, and were followed by a cessation of respiration for some seconds. The whole attack was attended with marked and alarming symptoms of dyspnoea, so that the propriety of performing tracheotomy to prevent a fatal accident during one of these attacks had been very naturally under consideration. Laryngoscopic examination in ordinary cases of hysterical stridor shows the vocal cords more or less closely approximated to the middle line during inspiration and expiration. If the mirror be kept in position some time, the cords will be seen often momentarily separating and then closing up again. In some cases the cords will be seen to approach each other during inspiration and

separate during expiration, the exact reverse of the normal movements; but the extent of the closure and separation is by no means regular, and varies with successive respirations. These are the cases, above mentioned, in which dyspnoea and stridor attend inspiration alone. In very rare cases the cords are said to present the appearance of bilateral paralysis of the abductors of the glottis. A narrow cleft only exists between the cords, which is still further narrowed on each inspiration. I have never seen this condition in hysterical stridor.

There is one other affection that must be mentioned in this connexion, although here the glottic closure is complicated with spasmodic action of the expiratory muscles. This is the affection known as hysterical cough. The cough varies much in character in different cases, but is mostly dry, loud and barking, or shrill, or of metallic quality. It is often of a short rhythmic character, and may be almost incessant; or it may occur in paroxysms, and in some cases these paroxysms tend to recur at certain periods of the day. Hysterical cough may be associated with whooping inspirations and signs of dyspnoea. The cough is intensified by emotional causes, and is apt to be worse when people are present than when the patient is alone. It ceases during sleep. Laryngoscopic examination gives negative results.

The preceding account of the motor troubles of the vocal cords in hysteria does not pretend to be exhaustive. It has only been attempted to indicate the leading features of the chief affections. The symptoms having more or less resemblance to those of other diseases, it will be well to briefly summarise the grounds upon which a diagnosis of their hysterical character will be made. There are, in the first place, those general considerations which apply to the diagnosis of every hysterical malady—such as the age, sex, habits, and physical, mental, and emotional condition of the patient. Hysterical affections of the cords, like other hysterical affections, occasionally occur in girls before puberty, as well as in men and boys. The presence of other undoubtedly hysterical symptoms will materially aid the diagnosis—such as attacks of hysterics, hemianæsthesia, paralysis, and contracture of limbs. Certain peculiarities in the attack will point to the hysterical origin, such as the sudden onset, the relation of the malady to emotional causes, whether arising as the result of such causes, or being aggravated thereby. The persistence of the voice for certain acts—such as coughing, sneezing, or singing—is highly characteristic of the hysterical nature of an aphonia. It is characteristic of hysterical aphonia, not including, however, the rarer spastic form, that the patient usually evinces little real effort to speak, and there may be even a marked immobility of the lips during the attempt. The cessation of stridulous breathing during sleep is peculiar to hysterical stridor. Chloroform narcosis will also cause its complete cessation, and both in sleep and in the earlier stage of chloroform narcosis the emission of vocal sounds may decide the nature of an aphonia. The coincidence of marked sensory trouble about the pharynx, palate, and larynx points to the hysterical origin of the affection. This is sometimes of the nature of hyperæsthesia, but more frequently of anæsthesia. Such patients may be particularly tolerant of laryngeal mirrors, and easily bear the introduction of an instrument into the larynx itself. Laryngoscopic examination is, however, the most important means of establishing our diagnosis. There is an absence of gross disease of the larynx. The vocal cords will usually be of a perfectly normal colour, or may be merely somewhat congested. The various disordered movements above described will be recognised. These are almost always bilateral, and equal on the two sides. They, for the most part, bear no resemblance to the effects of organic disease. Tremor of the cords is often seen in all hysterical affections.

Some of these affections are very intractable, and may require us to bring to bear all those principles of treatment which have been found serviceable in other forms of hysteria. Into these I need not enter. Most cases of aphonia yield readily to suitable treatment. Derangements of health must be treated from the first. Iron and strychnia are often indicated. We must impress on the patient the absolute certainty that the aphonia can and will be cured. If laryngeal catarrh be present, we must apply suitable treatment, especially direct applications with the brush, which have a good moral effect. The preceding course, combined with occasional strong, peremptory exhortations to use the voice, will often succeed in effecting a cure. If not, faradism should be used externally—or, better still, internally. A strong current should be used, and it is important that the first application should be attended with

decided benefit, if not complete cure. In the treatment of the various kinds of stridor, it is advisable, once having made our diagnosis, not to exhibit to the patient too much concern or alarm. In some of these cases the dyspnoea is really alarming, but any sign on our part that we consider the case very serious or very extraordinary tends to aggravate the symptoms. In looking over the records of cases, one finds that tracheotomy has been performed in cases of stridor that were in all probability hysterical, and yet the tube had to go on being worn indefinitely. When urgent and persistent dyspnoea exists, inhalation of chloroform, short of anaesthesia, will relieve the symptoms. Otherwise the treatment of hysterical stridor and hysterical cough must be mainly of that kind which is beneficial in other hysterical maladies. Relapses are apt to occur in all these motor affections of the vocal cords, and it is by a judicious employment of general treatment, both physical and moral, rather than by local or special treatment, that relapses can be effectually guarded against.

Wimpole-street, W.

EXCISION OF THE LACRYMAL GLAND IN CASES OF EPIPHORA IN WHICH SEVERE NERVOUS SHOCK ATTENDS ITS TREATMENT BY DILATATION.

By J. VOSE SOLOMON, F.R.C.S.,

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SURGERY is indebted to Percival Pott¹ for advising that stricture of the nasal duct should be submitted to the same principles of treatment as that of the urethra. But it was reserved for Bowman² (1851) to devise a method on which the principle enunciated by Pott could be carried into practice *per vias naturales*, and applied to the whole of the tract which constitutes the excretory tear canals. Bowman slit up the canaliculus, thereby making possible the introduction of silver sounds, or probes, of sufficient size and strength to combat strictures, even when rigid, and also certain diseased conditions of the lacrymal mucous membranes. Laforest had previously (1753) invented a probe for the treatment of stricture of the nasal duct, which he introduced through the nostril; this plan, when successful, fails to reach two common seats of stricture, and, as witnessed by the writer in the hands of the late Mr. Wm. Martin, is difficult of performance. A large number of cases of epiphora are successfully treated by Bowman's method, with and without the aid of other remedial agents. But there are some in which a full-sized probe can be easily passed, and where, after a prolonged and carefully conducted mechanical treatment, tears continue to collect and overflow on to the cheek. In some of these, I believe, we have to deal with a chronic oedematous or a flabby condition of the mucous membrane of the nasal duct. The canal readily yields to the pressure of the sound, and on its withdrawal again obstructs the passage. In certain chronic diseases of the cornea, the excretory canals are, on exploration, found free and apparently healthy, the lacrymation being due to irritation of the ophthalmic division of the fifth pair of nerves. The pain and nervous agitation attendant on the modern treatment of stricture of the tear canals vary much, according to the degree of susceptibility of the patient. Some are quite indifferent to the surgeon's proceedings; occasionally, the patient faints on every repetition of the operation. In others, such extreme prostration is prevented by the taking of a stimulating draught. In a recent case which came under my care, a lady of fifty years, of good general health and apparently passive temperament, who had suffered from epiphora of fourteen years' duration, although the process of dilatation was not attended by marked signs of distress, the nervous shock became so great that her health failed, and there was no alternative, in my judgment, but to suspend the mechanical treatment. As the patient expressed herself most anxious to be rid of her epiphora, which gave great discomfort, I proposed to excise the tear gland. This was carried out on the lines advised by Macnamara³ with complete success. In the cases

I have operated upon the incisions have united without supuration, and the cicatrix soon disappeared sufficiently to escape remark.

The object of this communication is to advise recourse to excision of the lacrymal gland when a serious amount of nervous shock attends Bowman's method. Up to the present the operation of excision has been confined, I believe, to instances of suppuration and dilatation of the lacrymal sac. Such may, according to my experience, be successfully treated by simpler methods, cases of caries being excepted.

Birmingham.

A CASE OF OBLIQUE AND DIRECT INGUINAL HERNIA ON THE SAME SIDE;

WITH REMARKS ON THE CONJOINED TENDON.

By HENRY RUTHERFURD, M.A., M.B., C.M. GLAS.

THE specimen which is the subject of the following remarks was obtained from the right side of a man aged fifty-seven, who died in the Western Infirmary of cancer of the liver. There was great enlargement of that organ and distension of the abdomen. It seems probable that this distension was concerned in the production of the herniæ. Some puckering about the internal orifices of both sacs, as well as the distance between the external and internal abdominal rings, and the incomplete character of the internal sac, seemed to point to the recent commencement of their process of formation; while, at the same time, the close connexion of the oblique sac with the cord suggested that this might have been originally the patent upper extremity of the processus vaginalis. The sac of the external hernia measured about four inches and a half in length from the deep or internal abdominal ring. It contained a loop of bowel, which slipped back into the abdomen on the scrotum being raised. The internal sac had slightly bulged out the structures lying in front of it, including the conjoined tendon; but in the collapsed state of the parts on the post-mortem table there was nothing to show its presence, as the parts were seen from without. From within, a protrusion about three-quarters of an inch in depth, and freely admitting the tip of the index finger, was seen running downwards, forwards, and somewhat inwards. Its sharp internal border was formed by a thickening, which was continued upwards on the abdominal wall, running towards the middle line, and which evidently represented the obliterated hypogastric artery. The deep epigastric artery was found in its usual situation immediately to the inside of the internal ring, making a slight curve towards the middle line, as if already somewhat dragged inwards by the neck of the oblique hernia.

The chief point of interest in the preparation was the demonstration which it afforded of the relation of the conjoined tendon to inguinal hernia. The tendon was found inserted not only into the linea alba, crest of the pubis, and commencement of the pectineal line, but into Poupart's ligament as far out as the deep or internal ring, and even beyond it, the outermost fibres curving outwards behind and beneath the cord and neck of the hernial sac. The outer border of the tendon presented a slight thickening, with a suggestion of muscular structure, which appearance, it is to be noted, was not due to a splitting of the fibres of origin of the internal oblique or transversalis, such as has been recorded.¹

My attention has been drawn to the inadequacy of the usual descriptions of the conjoined tendon by my friend Dr. John Yule Mackay, who has referred me to the observations of Braune of Leipsic on this subject. From these it would appear that the conditions observed in the present case are constant, that it is the conjoined tendon which defines and gives fixity to the deep or internal abdominal ring, and that therefore every direct or internal inguinal hernia carries in front of it or splits the conjoined tendon.

The importance of the conjoined tendon as a covering of direct hernia was long ago pointed out by Sir Astley Cooper.² Later, in his "Observations on Diseases of the Testis," he describes the insertion along Poupart's ligament, "beginning," he says, "almost immediately below the commence-

¹ Chirurgical Works, 1799, vol. i., p. 343.

² Manual of Diseases of the Eye.

³ Med. Chir. Trans., 1851, vol. xxiv., p. 337.

¹ Quain, seventh edition, vol. i., p. 1022. ² Lectures on Surgery, Lect. 28.