

## ORIGINAL COMMUNICATIONS.

THE RADICAL CURE OF CONGENITAL  
HYDROCELE.\*

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A Sontali boy aged 5, with a history of a swelling in the left side of the scrotum from birth, was admitted into the Medical College Hospital on 6th May, for sloughing ulcers and threatened perforation of the most dependent part of a large scrotal tumor. On examination the scrotum was found to be enormously enlarged, descending half-way to his knees. It formed a large tense tumor, possessing many of the characteristic signs of a hernia. The outline of the tumor was distinctly convoluted on its anterior aspect, leading to the supposition that it contained coils of intestine. There was distinct impulse on coughing. The tumor was not transparent, and it was readily reducible in the recumbent position. The external ring was distinctly enlarged and thickened. On the other hand there was no gurgling, and the tumor filled rapidly when the boy stood up, notwithstanding moderate pressure on the inguinal canal. It was plain that fluid and not gut, descended. In fact it was found that the contents of the tumor could be pumped freely up and down into and from the abdomen by alternately compressing and relaxing the scrotum after the manner of an ordinary elastic syringe.

It was accordingly diagnosed as a congenital hydrocele and tapped. Over two pints of serous fluid were withdrawn. The fluid was thick, of a dark green color, and contained an immense quantity of minute flakes of cholesterine. In a few days the fluid returned in considerable quantity. It was plain that such a hydrocele would ultimately become a source of danger to life, and that a radical cure was essential.

Three methods of radical cure have been proposed, *viz.*, first, the evacuation of the contents of the hydrocele sac and the subsequent injection of iodine, alcohol or some other stimulant for the purpose of exciting adhesive inflammation. Should this

method be adopted, the neck of the sac should be carefully occluded by pressure so as to prevent the possible entrance of any of the fluid into the peritoneum. This method, and by preference the injection of alcohol, is much in favor with French surgeons.

The second method is by what is called excision. This consists in making a free puncture into the scrotum with a sharp-pointed bistoury, evacuating the fluid and afterwards seizing the tunica vaginalis with a forceps as it appears at the sides of the puncture and snipping off a small portion.

The third method is by seton. This plan is recommended by Erichsen, also by Agnew and other American surgeons. A bistoury is plunged into the scrotum, the fluid allowed to run off, and a needle entered at the point of puncture and pushed through the bottom of the sac. A single silk thread is then drawn through and loosely knotted. The thread should not be allowed to remain more than 24 hours. Sufficient inflammation is said to be excited at the end of this time to cause adhesion of the walls of the sac.

The first and third of these methods, that is by the use of injection and of the seton, are obviously risky, and the second is uncertain. Fatal peritonitis has, according to Bumstead, attended the use of injection in some cases. And with regard to the seton, if we excite violent inflammation in the tunica vaginalis which in these cases is but a prolongation of the peritoneum, we have no certainty that it will not extend by continuity of tissue into the peritoneum. As I could not clearly perceive the *modus operandi* of the second method, that is by the excision of a small piece of the tunica, I discarded it without further consideration.

The safest plan, and the most certain in the matter of cure, appeared to be that which I finally adopted, *viz.*, ligature of the neck of the sac as it emerged from the external abdominal ring and removal by dissection of the scrotal portion.

The operation was simple in theory but difficult in execution. The tunica vaginalis which contained the hydrocele, and which I now exhibit, was greatly thickened, much sacculated and constricted by many bands of tissue, strongly reminding one of the "columnæ corneæ" of the heart. The cremaster was increased to the dimensions of a good sized muscle, and all the structures surrounding the external ring were much thickened.

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A careful dissection was made for the purpose of separating the testicle and cord; but the former was found imbedded in the hypertrophied walls of the tunica, and the cord was so spread out and flattened that it was found to be impossible to separate and isolate it. These structures had accordingly to be removed on the left side with the sac. A drainage tube was afterwards introduced and the case treated, with strict antiseptic precautions, as one for the radical cure of hernia, an operation that it closely resembled. The recovery has been uninterrupted. Some delay was caused by the pendulous condition of the loose scrotal tissues, but these are gradually wasting, and the boy will be discharged cured in a few days.

#### ON KERATOSCOPY AS A MEANS OF DIAGNOSING ERRORS OF REFRACTION.

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In keratotomy we have a means of determining the refraction of the eye, and of estimating and correcting any errors there may be with the aid of ordinary trial lenses. The method is most useful in assessing and correcting errors of refraction in those cases in which we are obliged to work without any help from the patients themselves as is the case with children, persons unable to read, and those afflicted with weak intellect: but the great points in its favor are that it is a much quicker method than the usual one, and is especially useful in working out cases of mixed astigmatism. Dr. Caignet of Lille, was the first to describe it, and Parent has worked at and written upon the subject. When using keratotomy for correcting errors of refraction the following points must be strictly attended to:—

1. The patient's eyes must be fully atropised.
2. The examination must be conducted in a dark room.
3. A lamp must be placed over the patient's head so far back that no direct rays of light fall upon the face.
4. The surgeon having provided himself with a concave centrally-perforated mirror, with a focus of

22 c.m., takes his seat immediately in front of the patient and at a distance of about 120 c.m.

5. The eyes are to be examined separately.

6. The observer places the mirror before his right eye, and directing the patient to look at the hole in its centre, proceeds with the examination. When the light is thus thrown into one of the patient's eyes (say the right), the pupillary area is seen well illumined and the bright red color at the "retina reflex" is pronounced. If the mirror be now carefully rotated horizontally, *i. e.* from side to side, and the illuminated pupillary area closely watched, a shadow will be seen moving horizontally across it. The *direction* in which this shadow moves is either in the *same direction* as that in which the observer moves the mirror, or in the *opposite direction*. When the mirror is rotated vertically a similar shadow is seen crossing the pupillary area and working either with or against the mirror. The observer must be careful to note whether the vertical shadow is exactly vertical in direction or whether it is slightly oblique; also whether the horizontal shadow is at right angles to the vertical meridian of the eye, or whether it also is oblique. In shape the shadow may be crescentic or almost linear, and if crescentic the surgeon must notice whether the edge is clearly and sharply defined or the reverse. Now supposing the shadow of the vertical diameter of the eye is quite vertical in position, and that it moves in the same direction as that in which we rotate the mirror, we may assume that in this meridian the eye is myopic, and when testing the horizontal meridian by the same means we find the shadow also moves *with* the mirror, *i. e.*, in the same direction as that in which the surgeon rotates it, we conclude that the whole eye is myopic, and that we have to deal with a case of myopia.

On the other hand, let us suppose that the shadow in both the vertical and horizontal meridia moves in the *opposite* direction to that in which we rotate the mirror, then we conclude that the case with which we are dealing is one of hypermetropia, emmetropia, or a very low degree of myopia. To decide which it is we proceed as follows. Into a pair of trial spectacle frames the surgeon fits a low concave lens—1 D, and having placed them before the patient's eyes, again directs the light by means of the mirror into one or other eye, so that now the rays have to pass through a *concave* glass before reaching the eye. If on rotating the mirror both vertically and horizontally,