but, with the exception of a case to be mentioned later, we have never met with the characteristic cholera-bacteria. At the same time, all who were sufficiently acquainted with bacterial work, have convinced themselves that the cholera-bacteria can be easily distinguished from all other bacteria, and that their characteristic properties justify us in regarding them as a specific independent variety.

Further, the spread of cholera during the last year in Europe, has afforded opportunities to a number of physicians to test my statements by the investigation of cholera-patients and cholera-cadavers, and to confirm them almost without exception.

The first thorough investigations were made by Nicati and Rietsch, to whom I showed the methods of investigation during my stay in Marseilles. They have examined a large number of cases (if I am not mistaken, more than thirty) for the presence of comma-bacilli, and have found them in all without exception. Almost at the same time, Van Ermengem studied the epidemic in Marseilles, and likewise found the comma-bacilli in all cases. Baber, Watson Cheyne, and Pfeiffer give the same report from their observations in Paris.

In Italy, the comma-bacilli have been found by Ceci, Escherich, Armanni, and Fede. Lately, Schottelius has published some facts with regard to positive results in Turin. Ceci's communications as to his investigations, made in the first instance in conjunction with Klebs, are in so far of interest, as both these investigators at first reported, that they had not found the comma-bacilli in all cases, and that they had also been found in other diseases, for example, by Klebs in a case of pneumonia. Later, however, Ceci, who had worked with insufficient objectives, procured a Zeiss's microscope with an oil lens, and with this subsequently demonstrated the presence of the comma-bacilli in his preparations and cultivations, so that he is now, as he himself told me, convinced of their constant presence in cholera. I received from Klebs a preparation from the above-mentioned case of pneumonia, as well as a portion of the evacuations in question, but I have not succeeded in finding any cholera-bacteria in them. I do not believe that Klebs still insists on identifying the bacteria in question with cholera-bacteria, on account of their very doubtful morphological resemblance alone, as all cultivation-experiments yielded negative results.

I can also add here some facts with regard to further investigations which I have myself made. When I left Calcutta, I gave the remainder of my cover-glasses to Dr. Dissent, physician at the Sealdah Hospital, with the request that he would make preparations of the intestinal contents from cases of cholera. Dr. Dissent, whom I have to thank for much help in procuring material for investigation during my stay in Calcutta, and for very valuable information with regard to cholera in Bengal, has also carried out this request with the greatest willingness, and has, in the course of half a year, sent me cover-glasses from more than eighty cholera-cases, from every case about five cover-glasses. Of these, only seventy-nine could be used, as some cover-glasses were spoilt during the transport. Of these seventy-nine cases, which were examined here by Drs. Weisser and Frank, seventy-six came from *post mortem* examinations, and three from dejecta of patients. Comma-bacilli were absent in only five of these cases, and in these five the preparations consisted of numerous red blood-corpuscles, whence it may be concluded that they came from cases at a late stage of the disease. In thirty-seven cases, the bacilli were present in moderate numbers, but quite sufficient to enable one to demonstrate them with certainty. Of these, thirty contained blood; in three it was doubtful whether blood was present or not, and in four there was no blood. Twenty-seven of the preparations contained very many bacilli, and in ten cases there was almost a pure cultivation. The latter again confirmed my former statements, that the more rapid the case the more numerous and the purer were the comma-bacilli.

I have, further, something to show you which has a certain amount of interest: it is a number of cholera-cultivations from different sources. I received, from almost all those who have found the cholera-bacteria during the recent epidemic, specimens of their cultivations, and it seemed to me of value to test these to see if they corresponded in all their properties. I have for this purpose collected them, and you see here cultivations from Marseilles, three different ones from Paris, and two from Italy. Along with them, you see one brought by me from Toulon. No difference can be observed in these cultivations, and they correspond exactly when investigated with high-powers, and their pathogenic properties are identical.

All these facts, then, confirm fully the statement made by me at our former conference, that the cholera bacteria occur only in cholera. Nothing of importance has been added by these recent investigations to what I have formerly communicated to you.

[To be continued.]

ON A NEW PROCEDURE FOR THE REMOVAL OF SMALL CALCULI FROM THE BLADDER, IN MALE CHILDREN.

By THOMAS ANNANDALE, F.R.S.E.,
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ALTHOUGH lateral lithotomy is a most successful operation in male children, it must, I think, be acknowledged that in the case of small calculi, this operation is a severe one, considering the small size of the irritating body to be removed. Erichsen (*Science and Art of Surgery*, vol. i, page 51, 8th edition) remarks, "Very many boys are cut for stone every year, and recover; but I scarcely recollect to have met with a middle-aged adult who had been operated on in childhood."

It is also well known to surgeons that lateral lithotomy in children has some special risks connected with the operation itself, and depending upon the tender nature of the urethral structures and position of the bladder. It is quite possible to seize and crush a stone in the young male bladder by means of a small lithotrite, but it is not so certain to insure the complete removal of the fragments after the proceeding as evacuating catheters are still made too large to pass along the young male urethra. I believe that this difficulty may be overcome, and that in certain cases lithotripsy may be thoroughly and successfully carried out even in children.

Sir H. Thompson (*Practical Lithotomy and Lithotripsy*, page 229), in advocating lateral lithotomy as the rule in young males, remarks, "The exceptional cases are those in which the stone is only too large to pass by the urethra, and therefore small. For these, there is no occasion to perform lithotomy. Opposed as I am to lithotripsy in children as a rule, for reasons already named, I nevertheless believe that, when the stone is so small as to be easily pulverised at a single crushing by a slender lithotrite, it is the simplest and best method of proceeding, and that when the stone can be well and easily crushed in two sittings it may be admissible." Unless the fragments of the crushed stone can be completely evacuated at the time of the operation, I am of opinion that lithotomy is still preferable to lithotripsy in children, even in cases where the stone is small.

In the meantime it has been my wish to discover some method which would be more simple, and cause less injury to the urethral and vesical structures in the case of male children, than the ordinary operation of lateral lithotomy, more particularly when the stone to be removed is limited in size.

In the following case, I practised what I believe to be a new procedure, and have hopes that it may prove to be an useful addition to our means of treatment in connection with this department of surgery.

CASE.—A boy, aged 4½, was sent to me by my friend Dr. Hunter, of Linlithgow, on account of symptoms of stone in the bladder which had existed for about a year. The usual symptoms were present and well marked, and, upon sounding him, I detected a small and light stone.

On December 10th, I put him under the influence of chloroform, and dilated his urethra by passing Nos. 6, 7, 8 and 9 silver catheters in succession. The first three passed readily, but No. 9 was slightly grasped in its passage along the urethra. Before removing this last catheter, four ounces of antiseptic fluid (corrosive sublimate 1 to 4000) were injected through it into the bladder. This catheter being withdrawn, a small lithotrite, having a diameter about equal to a No. 8 bougie, was introduced along the urethra into the bladder. After a little careful manipulation, the stone was seized, and fixed between the blades of the instrument. It was then found that, by depressing the handle of the lithotrite, its vesical extremity, together with the stone, could be readily felt through the abdominal wall immediately above the pubes. The lithotrite being held in this position, a small incision, an inch in length, was made in the middle line of the abdominal wall over the pubes, and for a short distance above it. The various tissues were divided, until the wall of the bladder was exposed at the point against which the blades of the lithotrite and the enclosed stone were pressing. A little further depression of the handle of the lithotrite caused the extremity of its blades covered by the stretched wall of the bladder to protrude through the wound in the abdominal wall; and a small incision having been made through the wall of the bladder by cutting upon the extremity of the lithotrite, the blades of the lithotrite, together with the stone, were pushed through the wound. The stone was here extracted from between the blades of the lithotrite; and the open extremity of a No. 7 India-rubber catheter was seized, and drawn into the bladder and along the urethra as the lithotrite was removed, thus leaving a drain for the urine to escape from the bladder.

The wound in the abdominal wall was closed by means of two horse-hair stitches, and a drainage-tube introduced into it so as to aid the escape of any urine which might flow from the bladder-wound. Irrigation with corrosive sublimate solution (1 to 2000) was employed during the operation, and the wound and parts around were covered with a dressing of corrosive sublimate wool. The stone removed was about the size of a horse-bean, of uric acid formation. For the first thirty-six hours after the operation, the urine was slightly tinged with blood, passed principally by the abdominal wound; but, after this, it flowed through the catheter, which had been secured in the bladder.

Forty-eight hours after the operation both drainage-tube and catheter were removed, the patient not having had the slightest bad symptoms. For twelve hours after the removal of the drainage-tube and catheter, the urine came by the abdominal wound; but, after this, it passed almost entirely by the urethra, and the patient was running about the ward, perfectly well, on the tenth day after the operation.

It may be said that this is simply a suprapubic lithotomy, and so it is, but I maintain that it is a much less serious proceeding than the ordinary suprapubic operation, as the bladder is scarcely disturbed, and the wound made in it is very limited. Its advantages over lateral lithotomy are:—1. That the urethra, prostate, and neck of the bladder are left uninjured; 2. That it is a much more simple proceeding, and does away with the principal risks which have occasionally been encountered in performing the operation on children.

I confess that it requires a little manipulative dexterity to seize a small stone in a male child's bladder; but no greater dexterity is required in doing so than what every surgeon, professing to be an operating surgeon, should possess.

It is possible that in certain cases the same principle might be carried out, by bringing the stone to the neck of the bladder, opening the prostatic part of the urethra, and thrusting the blades of the lithotrite and contained stone into the perineal wound; but in the case of children there can, I think, be no doubt that the suprapubic method is preferable.

PARTIAL DISLOCATION OF THE HEAD OF THE RADIUS PECULIAR TO CHILDREN.

By J. HUTCHINSON, Jun., F.R.C.S.,

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IN the BRITISH MEDICAL JOURNAL of December 5th, 1885, is a short paper bearing the above title by Mr. S. H. Lindeman, in which the true nature of an obscure and frequent accident in early life is well described. Mr. Lindeman has done good service in calling attention to it, and I should hesitate before again referring to the subject merely to establish a priority of publication. But there are some points in the article which might with advantage be amended. In the *Annals of Surgery* for August, I gave a full account of the lesion, with illustrations, having been led, a year ago, to ascertain its true nature (by experiments on the dead subject), owing to the lack of a satisfactory explanation in any previous work.

The best way of regarding this accident is to remember that the orbicular ligament, which in adults strongly grasps the bony head of the radius, in young children has a weaker hold on the same part, which with them is cartilaginous. The nucleus for the head of the radius does not appear until the age of 5, and this limits pretty accurately the time up to which the lesion is commonly met with. In fact, I could not produce it upon the bodies of children much older than this. During traction on the hand, combined with supination, as, for instance, when the child is dragged along or lifted by the arm, the ligament is very liable to slip up. Its attachment to the neck of the radius (only a thin membrane, which I have ventured to name the sub-orbicular) may be at the same time torn through, though this probably does not happen in a large proportion of the cases. Thus the bone slips a very little downwards, and a very little forwards. Mr. Lindeman thinks it may reach the depression above the capitellum; this would, of course, be accompanied by marked deformity, which is, on the other hand, conspicuous by its absence. If it were not so, the true nature of the accident would not have been so long overlooked, and the lesion ascribed to a displacement of the fibro-cartilage at the wrist, etc. (see Tillaux's *Anatomie Topographique*, p. 549, and also M. Goyrand's work). Mr. Lucy has observed and kept notes for me of a number of cases at the London Hospital, and we can unhesitatingly affirm that the deformity at the elbow would be overlooked by anyone, even if acquainted with the real nature of the lesion. In fact, although a true dislocation, it is rather one of the ligament than of the bone. It is perhaps possible, by "strongly supinating and

pressing on the head of the radius," to reduce the displacement; but, in my paper, an easier and a surer way is described.

Gently flex to a right angle, or a little beyond that; at the same time, gently but fully pronate the forearm. By this method, if the case be one of the class described, the ligament will infallibly descend to its right place, again grasping the head of the radius. The descent is known by the audible click (Mr. Lindeman's "thud" hardly expresses it) which then occurs, and by the relief of the symptoms, although the child is sometimes too young to reveal the latter; but the surgeon may feel sure, on hearing the click, that the displacement is reduced. Mr. Lindeman says that it is very liable to recur; I think this is due to his method (supination and pressure) not always effecting complete reduction. We have, with reference to this point, charged the mothers to bring the child back if the symptoms recurred, and in no case have they done so. No splint is absolutely necessary, although it is certainly well to keep the part at rest for a time.

The reason why pronation and flexion succeed so readily, is probably to be found in the shape of the head of the radius. That part of it opposed to the curve of the orbicular ligament, in full supination, has a rectangular edge, whilst in pronation it is rounded off and less deep; hence the ligament easily slips over the latter edge when brought up to it by flexion of the forearm.

The frequency of this accident may be judged from the fact that, at the London Hospital, two perfectly typical cases have often been seen on the same day. Whereas formerly they were liable to cause doubt and were unsatisfactory to deal with, their nature and the method of reduction are now fully established. A few examples may be quoted from Mr. Lucy's and my own notes.

1. Sarah M., aged 2½, was admitted with left forearm semiprone and motionless, crying with pain on passive movement. The mother had pulled the child up by the hand, the forearm being semipronated and fully extended, an hour before. On full pronation and flexion a click was felt, and the symptoms disappeared. There was certainly no lesion at the wrist.

2. John B., aged 2 years, had been dragged from the floor by the hand. The child, a fat heavy one, cried, "let its arm hang and couldn't hold anything." The forearm was extended and semipronated; full flexion and pronation produced a click; the child ceased crying, and easy movements of the radius followed.

Dissection of Sprain of Elbow (reduced post-mortem), showing the orbicular ligament displaced upwards, the head of radius forwards and downwards.

3. May F., aged 1 year, was admitted with her forearm bent and semipronated. One movement of flexion and pronation caused a click to be heard, and the child actively resisted any further manipulation.

4. A young child was diagnosed to have "an injury to the head of the radius," and its arm was bandaged to the side. During the next two or three days, she continually complained of pain in the