

to for fear of paralysing the vital centres in the medulla. We decided finally to employ a local anæsthetic.

The skin was completely anæsthetized for a radius of two inches around the original puncture with ethyl chloride and an incision made down to a ninth rib along its axis with all the necessary antiseptic precautions. The periosteum over the rib was denuded to a distance of about one and half inches and a piece of bone one inch long was cut and removed. The pleura was further incised and about eight ounces of fluid gushed out.

When the pleural cavity was almost completely drained and the lung tissue well in view, a second puncture with a long needle and a two-cubic-centimetre syringe was made. A syringe full of fluid was withdrawn from a prominent part of the lung.

This confirmed the origin of the cyst and at the same time encouraged us to make a free incision. The parietal layer of the pleura was stitched to the chest wall all round the wound margin to shut off the cavity and prevent systemic infection. The lung was incised at the place of second puncture, some fluid drawn out and a big cyst about the size of a child's head along with its contents was removed. The cavity was washed out with normal saline, a tube stitched in and the wound closed.

The whole operation took about forty minutes but during all this period local anæsthesia was kept up with generous sprays of ethyl chloride. The child faced the operation very bravely, although he was in great trouble on account of a constant irritating cough throughout. The coughing was beneficial however in expelling the cyst with its brood capsules, etc., from the cavity. The child is still in the hospital and progressing.

Conclusion.—Hydatid disease of the lung though rare still demands special consideration in the diagnosis of respiratory troubles especially in cases with effusion.

2. The disease is an insidious one and often not attended with any great symptoms. The clinician therefore is misled and can easily be thrown off his guard.

3. Before having recourse to tapping it is advisable to make an exploratory puncture, examine the sputum and blood of every patient in the hope of finding something extraordinary (hooklets and eosinophilia, etc.).

4. If a cyst is accidentally tapped, immediate operation is the only expedient.

5. Local anæsthesia if properly administered often obviates the risk of shock and other untoward symptoms.

A CASE OF RESUSCITATION BY PUNCTURE OF THE VENTRICLE

By M. GANGULI, M.B.

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P. D., a Hindu male nineteen years of age, was being operated on on the 17th March, 1934, for a right-sided varicocele under pure ether, the induction having been made with chloroform. The operation was started while the patient was completely under surgical anæsthesia and had been given pure ether for about eight to ten minutes. Atropine sulphate, 1/100 grain, was given subcutaneously about half an hour before the induction of anæsthesia which was very smooth without any struggling or shouting.

About three minutes after the operation was started, while the cord was being separated, the patient stopped breathing after taking three or four unusually long deep breaths and the pulse was found to be absent.

The following steps were taken in quick succession. The face was rubbed hard with a towel, the Trendelenburg position was adopted with the legs at right angles to the trunk and the cardiac region was smacked twice with a hot wet towel. The mouth was held open with a gag, the throat sponged and the tongue pulled out and relaxed alternately three times. Simultaneously with the pulling out of the tongue artificial respiration was started and continued without any effect. The heart was auscultated directly without any sounds being audible. The rectal sphincter was dilated and it was found to be so lax as to allow four fingers to go in with ease. As there was no response, the needle of a serum syringe which was at hand was introduced through the fourth interspace three-fourths of an inch internal to the nipple line and immediately withdrawn. The heart was again auscultated but there was no positive sign. The needle was again introduced a little deeper through the same puncture. A distinct resistance was felt this time as if piercing some muscular structure after passing through the parietes. The needle was held between the index finger and the thumb for about two seconds when suddenly a distinct movement was communicated to it and simultaneously a medical graduate who was feeling the right radial artery said 'yes'. On feeling the pulse the first few beats were found to be feeble, irregular, unequal in volume and tension, and rather slow.

The time that had elapsed between the last expiration with the disappearance of the pulse and the puncture must have been about three minutes.

As the respiration had not returned, artificial respiration had to be continued for about another minute before the first feeble effort at inspiration was noticed. The patient was watched for another six to seven minutes during which time oxygen was given. As it was found that the patient was behaving satisfactorily the anæsthetic—ether—was administered again, and the operation completed without any further trouble.

During the period that the patient was in cardio-respiratory paralysis the pupils did not react to light and were not very widely dilated. They were in that degree of dilatation which obtains in deep but safe narcosis with ether. The pupils were fixed in that position the whole time and only started contracting after the pulse and respiration had returned. The patient was so dark that very little could be made out from the colour of the lips or nails.

The patient recovered from the effects of the anæsthetic without any convulsions or prolonged period of unconsciousness. The convalescence was uneventful and he left our care on the fifteenth day from the date of the operation, without any symptoms of changes in the cerebral cortex due to lack of circulation for the few minutes during which the patient was in cardio-respiratory paralysis.

The patient's heart and lungs were normal and he had been operated upon for lymphangiectasis of the left side under chloroform-ether anæsthesia a couple of months ago.

The points of interest are discussed below :—

Primary cardiac failure may occur during the administration of pure ether in a chloroform-ether sequence.

Atropine in grain 1/100 dose does not always prevent vagal inhibition though it may be mentioned that in the present case it is not possible to be certain whether the failure was due to ventricular fibrillation or vagal inhibition. The protective action of atropine before chloroform administration nevertheless seems doubtful.

There was no doubt that the myocardium had ceased contracting as was found with the puncture of the needle, which gave a distinct movement when the heart resumed its contractions.

It must have been the stimulus of the puncture that started the contractions of the heart again.

Though recent researches tend to show that the auricles are more sensitive to puncture than the ventricles, in this case it must have been the ventricle as a longer needle was not at hand at the moment, and the desired result was obtained.

In this country instances of resuscitation by simple puncture of the ventricle has, to my knowledge, not been recorded.

My thanks are due to Professor L. M. Banerjee, M.S., F.R.C.S., surgeon to the medical college hospitals, for allowing me to publish this case and for his kind help in writing this paper.

A CASE OF EXTRAVASATION OF URINE DUE TO A CALCULUS IN A CHILD SIX YEARS OF AGE

By B. SUKHAVANAM, L.M.P.

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N., a male child 6 years of age, was admitted into the Municipal Hospital, Nandyal, on the 23rd April, 1934, at 11 p.m. with retention and extravasation of urine of forty hours' duration.

Condition on admission

Patient toxæmic, quick pulse, dry tongue, abdomen distended and tympanitic and absolute constipation for two days.

Bladder distended up to umbilicus.

Scrotum, penis and perineum swollen and phimosis was also present. No vesical calculus was felt per rectum on three consecutive examinations.

Treatment

A soap-water enema was given without effect.

A dorsal slit was made and the meatus was exposed. A rubber catheter proving ineffective, a small-sized metal catheter was passed very slowly and carefully and an ordinary kidney tray full of urine was drawn off very slowly. Multiple incisions on the scrotum, penis and perineum were then made, and the catheter tied up.

Turpentine stupes to the abdomen were applied. A turpentine enema was given and this time hard scabulous masses were evacuated.

Glucose and water in sips were frequently given by the mouth to tide over the toxic condition.

Progress

Patient was progressing fairly well except for an occasional rise of temperature to 101°F. on three different occasions. Three days later a lump was felt in the right lumbar region and the boy complained of pain there. Turpentine stupes to the abdomen were given and the urine was drawn off every six hours by a rubber catheter after which the swelling and pain subsided.

Twenty-three days later the patient began to leak urine through the peno-scrotal junction. An incision was made in the middle line near the fistulous track and a small urethral calculus $\frac{3}{4}$ inch by $\frac{1}{4}$ inch with one end bigger than the other was removed. After this the patient made an uneventful recovery.

No stone was felt in the bladder per rectum at first probably on account of the smallness of the stone and of its being impacted in the urethra which caused retention and extravasation of urine.

After the drawing of urine the stone might have been dislodged in the subcutaneous tissues and hence it escaped notice. The lump referred to above suggests back pressure on the kidney. Can there have been a calculus in the ureter?

The small size of the stone extracted suggests this to be a ureteral one.

Lastly I wish to thank the assistant surgeon, Dr. S. Ramadas, L.R.C.P., M.R.C.S., for kindly permitting me to use the case notes and valuable suggestions.

Note.—It can scarcely be said that a stone $\frac{1}{4}$ by $\frac{1}{4}$ inch is a small one. It would appear unlikely that a stone of this size could pass down the small ureter of a child. The lump referred to above might have been due to general back pressure from the bladder or possibly to the presence of some other small stone in the ureter. From the fact that the swelling subsided after some urine had been drawn off, the first possibility appears to be the more likely.—EDITOR, I.M.G.

RUPTURE OF THE HEART

(WITH SLIGHT EXTERNAL MARKS OF VIOLENCE)

By S. R. INGLE

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THE rarity of such an injury and its medico-legal importance have prompted the publication of the following case:—

History of the accident.—A driver of a motor-lorry with about a dozen passengers, while driving over a causeway about eight feet high, lost control of the car, with the result that it fell into the water (knee-deep) below, on its side. One of the passengers aged about twenty-five years died instantaneously while others escaped with minor injuries. The car was practically undamaged.

An autopsy held by me on the deceased to ascertain the cause of the death revealed the following appearances:—

- (1) Two ante-mortem contusions, 2 inches by 1 inch and 3 inches by 1 inch each, over the outer side of the right arm.
- (2) Contusion over the front of the chest $3\frac{1}{2}$ inches by 3 inches.
- (3) All the internal organs were pale in appearance, but healthy.
- (4) Oozing of blood from the nostrils and mouth.
- (5) Left pleural cavity contained about one pound of watery blood-stained fluid. There were a few ecchymosed patches from half an inch to three-fourths of an inch in diameter over the anterior surface of the left lung.
- (6) The posterior aspect of the pericardium was deeply injected; but there was no tear. On opening the pericardium about ten ounces of fluid and clotted blood were found inside. There were two tears admitting the tip of the index finger over the posterior aspect of the right chamber with a few adherent blood clots. No fracture of ribs or vertebræ was detected.

Comments.—Rupture of the heart may occur independently of external marks of violence, or from a slight external violence if it is diseased. Again, external violence may cause rupture of an even healthy heart either with slight marks of external violence or without external marks of injury being visible. The case reported above falls under the former category. Few such cases have been reported; but no explanation has been offered as to the mechanism by which this accident is brought about.