

are applied from the vein inward. The one next to the vein needs the most care for its insertion, so that when tied the overlying ligament will not compress it. In the same manner close the hernial tract and reunite the deep fascia; finish the operation by suturing the skin with a single strand of No. 0 chromic gut applied subcutaneously.

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STRANGULATED HERNIA IN CHILDREN.*

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Strangulated hernia in infants and children is by no means so rare as one might be led to suppose from various text-books and monographs on hernia. I have operated on eight patients under the age of 2 years, with one death. The one fatal case was an infant of 8 weeks, and almost moribund at the time of operation. Strangulation had existed for two days. The patient was operated on after midnight, in a poorly-lighted room and under most unfavorable circumstances. The cecum and appendix were present in the sac. The patient rallied after operation, but died two days later. This is the only case in which no attempt at radical cure was made. It was very interesting to note that a considerable portion of my cases were of the cecal variety. In four, or 50 per cent., the sac contained cecum, and in three of these four the appendix also was found. In one case the appendix was gangrenous and it was thought best to remove it. In the others the appendix seemed viable and was returned to the abdominal cavity. Five of my patients were under 1 year of age.

Tariel, of Paris, has made the most complete collection of cases of strangulated hernia in infants. He states that in 128 cases the cecum and appendix were found in only eight.

I believe that the duration of the strangulation is of special importance in hernia in infants. In my series the longest duration was forty-eight hours, and the shortest twelve. There was only one case in which a bacteriologic examination was made of the fluid contained in the hernial sac, and this was negative.

Most writers on strangulated hernia have stated that in the greater proportion of cases the constriction was due to the neck of the sac. Marsh, in 1874,¹ stated that of 32 cases of strangulated hernia in infants, strangulation was due to the neck of the sac. And Tariel states that in 128 he found the neck of the sac to be the cause of strangulation in 58. Personally, I believe this view to be incorrect; in the great majority of instances Tariel and Marsh based their calculations on cases operated on prior to the introduction of modern methods. By these older methods it was impossible, in the small incisions employed, to accurately determine the location of the cause of the constriction. By the modern methods, Bassini's and Halsted's, the aponeurosis of the external oblique is freely opened, and only when this is done is it possible to state definitely whether the strangulation is due to the neck of the sac or the external ring. In every one of my own cases the aponeurosis was freely opened, and this alone was sufficient to render reduction easy, showing that in not a single case was the neck of the sac the cause of constriction. I believe that with scarcely an exception herniotomy in all cases of strangulated hernia in infants and children may be supplemented by an attempt at radical cure. I have employed this procedure in all my cases, with the exception of the one

nearly moribund at the time of operation, and in no case up to the present time has there been a recurrence.

I should like to add a word in regard to the diagnosis of strangulated hernia in infants and children. This is not unusually difficult. There is, however, one condition, viz., hydrocele of the cord, which very frequently gives rise to confusion. The history of the case and general condition of the patient will, as a rule, make the diagnosis clear, although I have seen a number of cases in which prolonged taxis, under anesthesia, has been resorted to for simple hydrocele of the cord.

A diagnosis of strangulated hernia having been made, I believe that gentle taxis, not longer than two or three minutes, should be tried. If this fails, application of hot cloths for from ten to twenty minutes should be resorted to, and if a second attempt to reduce it under gentle taxis fails, chloroform or ether should be administered and preparations made for immediate operation. The relaxation following anesthesia will occasionally render reduction possible without operation, but if this fails, operation should be performed.

I have personally known of three deaths from strangulated hernia in infants as the result of temporizing. One of these was an infant aged 8 months, who was brought to the Hospital for Ruptured and Crippled in *extremis*. Operation was refused. The after-history I am unable to state, but death undoubtedly occurred within a short time.

In another case, a patient aged 1 year was brought to the hospital. Prolonged taxis had been tried prior to admission. Very moderate taxis was again made by the house surgeon, with the result that the hernia was easily reduced. The infant, whose condition on admission was by no means good, rapidly grew worse and died within twenty-four hours. No autopsy was permitted.

These personal cases are cited to furnish abundant evidence that the chief danger lies in deferring operation.

CENTRIFUGAL ANALYSIS OF URINE.

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The immense value of urinary analysis in its interpretations of physiologic and pathologic processes may now be said to be fully appreciated by the practical clinician. The disturbance of metabolism, the derangement of the physiologic balance, the disorder of secretion and excretion, indeed the tendency toward death or recovery are often more accurately indicated by careful scrutiny of the urine than by any other available means. The many and important improvements in our methods of analysis have done much to place this subject within the ready reach of the advanced physician. It must, however, be admitted that, notwithstanding the degree of advancement attained in expert laboratory work, there remains much to be accomplished in the way of rendering many of the processes more expeditious and ready, so that they may be made more generally available by the busy physician in practical work. Up to the present time the more rapid and ready processes in uranalysis are only available for a few of the leading constituents of the urine—and these mostly regarding qualitative rather than quantitative data. It therefore happens that the practical clinician for the most part is only able to make a partial and therefore incomplete analysis of the urine in a few of his more important cases, whereas uranalysis should properly constitute a routine of complete investigation in all details of the urine in all

*Read in a Symposium on Strangulated Hernia, before the New York County Medical Association, New York City.

¹ St. Bartholomew Hospital Reports.