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Appendicitis in premature babies

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From 1st January, 1973, to 30th September, 1977, 11 cases of appendicitis were observed in premature babies. All patients were subjected to operation. One patient was lost. For the diagnosis, anamnestic data concerning infections, the general and localized symptoms, laboratory data and X-ray findings should be taken into consideration. Close observation of the patient is necessary for determining the optimum time for surgery. This and rational antibiotic and postoperative therapy are essential in the treatment of the condition.

Appendicitis in the newborn is considered an extremely rare condition. During the period from January, 1973, to October, 1977, we observed and treated surgically 11 cases of appendicitis in prematures.

Schaup et al [7] reviewing the literature until 1960, found 24 cases that occurred in babies less than one month of age. Even less is known about appendicitis in premature babies. Only few such cases have been reported [3, 5, 8]. In 1952, Snyder [9] analysed the data of 18 different authors. Among the 12,794 cases of appendicitis only 34 occurred in children less than one year old, and no prematures are mentioned in the material.

The first report in Hungary about a successful operation of appendicitis in a premature baby appeared in 1962 [1]. Further 4 cases were published in 1968 [2]; two of these patients survived. The same authors described 4 more cases, where appendicitis was discovered at autopsy. The latest report [6] dealt with two small-for-dates newborns surviving after successful appendectomy; their birthweight was 2600 and 2000 g, respectively.

PATIENTS AND DISCUSSION

Of the 11 patients diagnosed to have appendicitis and operated upon, 10 are alive today. The baby who died weighed 1150 g. The weight of the surviving ones was between 1050 and 2200 g, with an average of 1580 g. Their age was between 4 and 18 days (average, 9.9 days). Three of the patients were boys, 8 girls.

The 1 minute Apgar score was below 7 in five cases. The possibility of an intrauterine infection arose in 4 cases because of rupture of membranes 48 hours before delivery or foul amniotic fluid. One baby had had an anteponated umbilical cord and breech delivery. Six patients later showed signs of umbilical infection. Four of these babies had exchange transfusions through the umbilical vein. Three of the latter 4 patients had signs of an intrauterine infection. Bacteriological tests from the umbilical stump revealed haemolytic staphylococci in 4 cases, E. coli and staphylococci in one, and Klebsiella in one patient.

Prematures display even fewer symptoms than do full term infants, and the visible signs are much less obvious. Term newborns usually have fever. This was not, however, the case with any of the premature patients, confirming the findings of other authors [4].

The initial fretfulness observed in newborns is also missing in prematures. They appear ill early, have a poor appetite, are often vomiting (occasionally bile-stained fluid) and have a distended abdomen. These are, however, only general symptoms, that may call attention to the abdominal problems.

Pain is an obligatory and localizing sign, but its symptoms are poor. They are twitching of the face and flexion of the right leg upon palpating the abdomen [1]. There may be side differences at palpation and even on the abdominal X-ray pictures. The order of appearance of the clinical symptoms usually follows the above sequence. It may take a day, but sometimes they appear within hours in the wake of the pathological process. Not infrequently, a palpable mass develops in the ileo-coecal region, indicating the localisation of the inflammation. The process may come to a temporary halt at this stage, lasting from a few hours to a whole day. It is still not too late at this time for the operation, and the majority of the patients can be saved.

At the onset of abdominal symptoms we found elevated WBC counts, over 10 000/mm^3 in 4 cases. The platelet count fell in 3 patients from the initial 100—200 000 to well below 100 000.

X-ray pictures were taken in 6 cases. In one free air could be demonstrated in the abdominal cavity, 3 exhibited distended intestines, with an air-fluid interface in 2 cases. In 2 further cases the X-rays revealed a soft-tissue mass in the ileo-coecal region.

Antibiotic treatment was prescribed in each case; where there was an early rupture of the membranes or asphyxia, antibiotics were given immediately after delivery. In the remaining cases they were introduced following exchange transfusion or umbilical inflammation.

When removing the appendix, a perforation was found in 6 cases; 4 were gangrenous and 1 ulcero-phlegmonic. In this last case a localized periappendicular peritonitis was also observed.

In 5 cases we felt it safe to insert a thin polyethylene tube through a small separate hole to drain the ab-

dominal cavity and to administer antibiotics locally.

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On the basis of the above data, it is our opinion that appendicitis is more common in premature than in term newborns. During the same 4 year period, only 3 cases of appendicitis were observed in mature newborns. The possibility that appendicitis is only part of a septic process in the premature baby, somewhat similarly as a necrotizing enterocolitis, cannot be excluded. The history of some of our patients also indicates the probability of such an explanation.

Special attention should be drawn to the stationary period outlined above. It could partly be due to the use of antibiotics, and this is the time when the operation should be carried out.

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