most cases of parathyroid adenoma the serum PTH is clearly raised though O'Riordan et al. (1972) have reported an overlap with the normal range in some cases.

The use of selective venous catheterization has become a well established technique in adults for the localization of parathyroid tumours (Davies et al., 1973; Eisenburg et al., 1974). However, best results are obtained if the thyroid veins are catheterized (Bilezikian et al., 1973). The precision of the localization is reduced considerably if only the great veins are catheterized. However, in view of the lack of experience of this technique in children we did not feel justified in attempting difficult catheterization of small veins.

The catheter study confirmed the diagnosis of a parathyroid tumour beyond doubt and suggested its inferior position. However, lateralization was difficult from the study as veins from both sides appeared to enter the jugular vein at the site of maximal PTH, though the tumour was large and easily found at surgery.

The technique of selective jugular venous catheterization for estimation of PTH levels is an established technique in adults that seems to be applicable and useful in the diagnosis of parathyroid tumours in childhood.

Summary

A 10-year-old boy with a parathyroid adenoma is reported. Parathyroid hormone estimations of samples obtained by selective jugular venous catheterization were useful in diagnosis and for localizing the tumour before operation.

References


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Duodenal intubation with secretin stimulus for diagnosis of giardiasis

The optimal pH environment for Giardia lamblia trophozoites is between 6 and 7 (Haiba, 1954). The trophozoites are intolerant of acid, and they are rapidly immobilized and destroyed when the pH in the duodenal contents is low (Petersen, 1972).
Secretin is a hormone whose primary action is to stimulate the exocrine portion of the pancreas to produce a watery juice which is highly alkaline by virtue of its high bicarbonate content. It also increases the flow of bile from the liver and of juice from Brunner's glands, and reduces motility in the stomach and intestine. This spectrum of actions of secretin should create optimal conditions for the demonstration of G. lamblia in duodenal juice.

Material and methods

Thirty children between the ages of 3 months and 13 years, with chronic diarrhoea, were studied. Stools were examined for parasites by conventional methods and reported negative. The patients were divided into two groups of 15 children each. In patients in group A, a tube was passed into the duodenum and its tip positioned near the ligament of Treitz. A second tube was then passed into the stomach, and with its tip positioned in the antrum continuous suction was applied to prevent gastric juice entering the duodenum. A sample of duodenal content was collected at the beginning of the procedure. Secretin was given intravenously an hour after the collection of the duodenal juice, at a dose of 2 units/kg. 30 minutes later a second sample of duodenal fluid was taken.

Group B received duodenal intubation only, so that gastric juice was not prevented from entering the duodenum. A sample of duodenal juice was collected and immediately afterwards secretin was given intravenously at a dose of 1 unit/kg, a second sample being collected 10 minutes later.

The samples of duodenal juice in both groups were examined as soon as possible after being centrifuged. The second sample of duodenal juice was collected from patients in group A irrespective of the result of the examination of the first sample. In group B secretin was given and the test continued only if the examination of the first sample had proved to be negative. pH of the duodenal contents was not measured.

Results

Group A. Of the 15 patients studied, only 3 had positive results (20%). In one, G. lamblia was found in the samples taken both before and after the secretin injection, but in the other 2 it was found only in the sample taken after the injection.

Group B. In 8 of the 15 patients (55%) studied G. lamblia was found only in the second sample, i.e. after secretin injection.

Discussion

G. lamblia is one of the most frequent parasites we encounter. Diagnosis may be made by examining the stool or the duodenal fluid, the two methods complementing one another (Fragoso, 1974). Parasites may also be seen on the surface of the mucosa obtained by small bowel biopsy (Barbieri et al., 1970).

This study has shown that it is not necessary to prevent gastric juice entering the duodenum to make a diagnosis of giardiasis by duodenal aspirate. Our results suggest that the demonstration of G. lamblia in the duodenal contents after a secretin stimulus may depend not only on the alkalization of duodenal contents but also on the increase of bile flow into the duodenum. This would be in keeping with the finding of G. lamblia trophozoites in gall bladders removed at operation (McGowan et al., 1948). The increased volume of duodenal content may also perhaps detach the parasite from the epithelial cells of the duodenal mucosa.

We consider that the examination of duodenal contents after a secretin stimulus is an effective method for the detection of G. lamblia.

Summary

The use of secretin to facilitate the demonstration of Giardia lamblia in duodenal juice was studied in children under investigation for chronic diarrhoea. 30 children aged 3 months to 13 years, whose stools were negative for G. lamblia, were studied. G. lamblia was demonstrable in a sample of duodenal juice in 1 of the 30 children before an intravenous injection of secretin (1 or 2 mg/kg), but in 9 of the 30 children after secretin. It is concluded that examination of duodenal juice after secretin stimulus is an effective method of showing giardial infestation.

References


Bacterial colonization of infants raised in incubators and under radiant heaters

During the past several years open radiant heaters have been used with increasing frequency in neonatal intensive care units. While this has permitted greater patient accessibility, exposure of the infants to room air raises the possibility of increased incidence of bacterial colonization and clinical infection, especially among those likely to have impaired host defence mechanisms. We have compared the prevalence of bacterial colonization of the skin and anterior nares and clinical infection among infants cared for under radiant heaters with those raised in standard incubators.

Materials and methods

Infants admitted to the study were (i) raised exclusively either in an Isolette incubator or under a radiant heater for the first 72 hours of life; (ii) free of proven or suspected infection and received no systemic antibiotics; (iii) born of mothers who had no infection and no prolonged rupture of membranes (>18 hours); and (iv) free of major congenital anomalies or conditions requiring surgical intervention. 58 infants meeting these criteria were studied, with 34 being raised in C-86 Isolette incubators (I) and 24 under KDC radiant heaters (RH). A thermoneutral environment was maintained in all cases. Selection of infants for I or RH care was based on availability of equipment and the type of handling required by medical and nursing staff. In general, those requiring a greater degree of attention were raised under RH (Table I). Apgar scores were equivalent in both groups. None of the I infants required either ventilatory assistance or umbilical arterial catheterization; in the RH group 6 required ventilatory assistance and 9 underwent umbilical arterial catheterization on the first day of life. 8 of these 9 infants had bacitracin ointment applied topically to the umbilicus once a day.

Infants in both groups were admitted with approximately equal frequency to one of two adjacent rooms, neither of which had a circulating air system. Before handling of infants, all staff members gowned and washed to the elbows with hexachlorophane (pHisohex). None of the infants was bathed with soaps containing antimicrobial agents before completion of the study. Cultures were taken with a dry cotton swab daily for the first 3 days of life from the anterior nares, umbilicus, and groin. Other studies, such as blood and urine cultures and blood counts were performed when clinically indicated.

Swabs were streaked on sheep blood agar plates, and were incubated aerobically at 37°C for 48 hours. Subcultures were done as necessary either on blood agar or MacConkey plates. Organisms were identified by standard bacteriological methods, previously described (Evans et al., 1970). In addition, blood agar plates were exposed to air daily for one hour at mattress level in both study groups.

Results

None of the 58 infants developed either clinical or laboratory evidence of infection. One infant with respiratory distress syndrome in the RH group died after completion of the study; signs of infection were not observed at necropsy, and post-mortem blood cultures were negative.

Bacterial colonization rates of the umbilicus, groin, and anterior nares during the first 3 days of life are shown in Table 2. The most commonly observed organism, Staphylococcus epidermidis, was seen with approximately equal frequency at all sites in both groups. The prevalence rate for this organism ranged from 17% to 65%.

Table 1  Details of infants in incubators and under radiant heaters

<table>
<thead>
<tr>
<th></th>
<th>Incubator</th>
<th>Radiant heater</th>
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<tbody>
<tr>
<td>Number (male/female)</td>
<td>34 (14/20)</td>
<td>24 (14/10)</td>
</tr>
<tr>
<td>Vaginal delivery</td>
<td>28</td>
<td>18</td>
</tr>
<tr>
<td>Caesarean section</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Umbilical arterial catheterization</td>
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<td>9</td>
</tr>
<tr>
<td>Assisted ventilation</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Topic bacitracin to umbilicus</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Systemic antibiotics</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Median (and range)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gestational age (w)</td>
<td>38 (30-41)</td>
<td>33.5 (28-42)</td>
</tr>
<tr>
<td>Median (and range)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>birthweight (g)</td>
<td>2170</td>
<td>1620</td>
</tr>
<tr>
<td></td>
<td>(1190-4540)</td>
<td>(870-4000)</td>
</tr>
<tr>
<td>Apgar score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 minute</td>
<td>8</td>
<td>7.5</td>
</tr>
<tr>
<td>5 minutes</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Median duration of rupture of membranes (h)</td>
<td>9</td>
<td>3.75</td>
</tr>
<tr>
<td>Median duration of labour (h)</td>
<td>6</td>
<td>6.3</td>
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