LETTERS

A Reliable Fluoroscopic Sign of Activation of Per Oral Jejunal Crosby Biopsy Capsule

Sirs,

During per oral jejunal biopsy using the Crosby capsule, the capsule is placed in the proximal jejunum, its position is confirmed by fluoroscopy, and then the capsule is fired by applying sharp negative suction with a syringe. To ensure that firing has taken place, various signs such as click sign and compressed air sign have been described, which at times may however be equivocal or absent.

When the capsule is cocked, the patient is so positioned that three air spaces of the capsule are seen clearly under fluoroscopy (Fig 1). These air spaces correspond to the internal structure of the capsule. After the capsule is fired, the central space increases in width and the proximal space is reduced or obliterated (Fig 2). This change in air space has been named as the three stripe sign.

Fig 1: Capsule in position before firing. Three air spaces are shown (arrows).

The reliability of the three stripe sign to assess activation of the capsule was evaluated in 336 jejunal biopsies performed over a period of 5 years in the department of gastroenterology.

Of the 155 jejunal biopsies performed between January 1985 and December 1986 where the capsule was fired by applying negative suction with a syringe, and fluoroscopy was used only for positioning the capsule, the capsule was found to have misfired in 24 cases (16%). When fluoroscopy was used before and after the firing of the capsule in 181 cases since January 1987, and the capsule was removed only after checking the desired change in air spaces, there were no failures. Thus, in our study the success rate using the three stripe sign was 100%. This is a rapid and confirmatory method to ensure that firing has taken place. The patient is already on the fluoroscopy table to ascertain the position of the capsule and observation of this finding adds minimally to fluoroscopic time.

Department of Gastroenterology
Postgraduate Institute of Medical Education and Research
Chandigarh 160 012

B Nagi
V Aggarwal
R C Thapar

References

Scintigraphy for Bilio-Gastric Reflux

Sirs,

The article on thoracic stomach and duodenal gastric reflux (DGR) by Padhy et al prompts us to comment on some of their observations and conclusions. During the past several months we have been conducting pilot studies to standardise the method and to quantify DGR in thoracic stomachs by hepatobiliary scintigraphy. We have been studying the effects of various body postures, respiratory maneuvers, and time intervals after intravenous tracer injection, which are all important determinants of DGR episodes in a thoracic stomach. We have observed a few DGR to be short lasting and a few others to develop after a delay of as long as 6 hours.
In the study by Padhy et al. the scintigraphic methods were based on previous studies performed on patients and controls with an intra-abdominal stomach which is less influenced by respiratory and postural manipulations. Besides, while the gastric juice bile acids were sampled only once (fasting juice), scintigraphy was performed over an extended period of 3 hours. During 3 hours of scintigraphy the patient has to be moved to and fro from the gamma camera to economise on the camera time. More importantly, the authors have strictly defined criteria for DGR in the bile acid study by taking a cut-off value based purely on tests performed prior to surgery on their patients and not on tests in healthy controls. They have not quantified DGR by the scintigraphy method and taken a cut-off value. Hence, the presence of bile acids up to 93-83 mg/dl was considered negative DGR in the bile acid studies and any movement of tracer from the duodenum into the stomach was considered positive DGR in the scintigraphic study.

Lastly, no gold standard has been used against which the 3 tests have been compared. Calculating the sensitivity and specificity of each of the three tests using combinations of any positive of the three tests as a standard is not statistically correct. These factors could have played a role in projecting the scintigraphic method to be more sensitive than the total bile acid method in their report.

We believe that bile acid assay is a very sensitive method which can be further enhanced by sampling the gastric juice over longer intervals. The scintigraphic methods require further refinement and quantification before they are claimed to be the investigation of choice in detecting DGR in thoracic stomachs.

Division of Medical Gastroenterology
Tata Memorial Hospital and
Radiation Medicine Centre
Parel, Bombay 400 012

K M Mohandas
V Santith Swaroop
Narendra Nair

References

Table: Results of low dose intradermal vaccination

<table>
<thead>
<tr>
<th>Study</th>
<th>Raptodyikhan et al</th>
<th>Desal et al</th>
<th>Present Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>358</td>
<td>119</td>
<td>285</td>
</tr>
<tr>
<td>HBsAg positive (%)</td>
<td>6.4</td>
<td>3.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Anti-HBs positive (%)</td>
<td>14.5</td>
<td>28.5</td>
<td>19.6</td>
</tr>
<tr>
<td>Serum HBsAg after 3 doses (%)</td>
<td>34.9</td>
<td>75.1</td>
<td>31.2</td>
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<tr>
<td>Serum HBsAg after 3 doses (%)</td>
<td>92</td>
<td>57.3</td>
<td>63.7</td>
</tr>
</tbody>
</table>

The high cost of three 20 μg intramuscular doses of hepatitis B vaccine makes large scale vaccination prohibitive. Initial reports of the use of 2 μg doses by the intradermal route showed good seroconversion rates of 80-90%. The problems mentioned in subsequent reports were as follows: (a) the technique of intradermal injection, (b) use of vaccine near the expiry date, and (c) persistence of protective antibody levels for a shorter period as compared to the intramuscular route. We have tried to obviate the first two problems since only experienced physicians administered the injections; also we used only those vaccines which had at least 6 months to go before expiry. The high dropout rate found in our study and other studies points towards need for creation of awareness and motivation for vaccination.

Thus, low dose intradermal vaccination for hepatitis B is successful in inducing immunity in about two thirds of persons vaccinated.

Division of Medical Gastroenterology
Tata Memorial Hospital
Parel, Bombay 400 012

Vinay Dhir
V Santith Swaroop
K M Mohandas, D C Desai
Arvind Nagraj
Sripad Banavali

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Letters

Sir,

We report our experience with immunogenicity of low dose (2 μg) hepatitis B vaccine given by the intradermal route.

Two hundred and eighty five health care personnel were enrolled for vaccination against hepatitis B. These included 108 doctors (37.9%), 107 nurses (37.5%) and 70 laboratory technicians (24.6%). There were 122 males (46.5%) and 153 females (53.5%).

8 (2.8%) HBsAg positive and 56 (19.6%) anti-HBs positive persons were excluded after screening. Three intradermal doses of 2 μg (0.1 ml) each of plasma derived vaccine (H-B-avax: Merck) were administered at 0, 1 and 6 months. The injections were given by a senior resident doctor on the volar aspect of the forearm using a 26 gauge needle.

Of the 69 persons who received all three doses, 44 (63.7%) seroconverted (anti-HBs positive by ELISA-Abbott Laboratories). Mild febrile episodes were noted in 3 persons. The 152 persons who did not take all three doses included 45 doctors, 66 nurses and 41 laboratory technicians. A comparison of our results with some other studies is shown in the Table.