Letters

False negative and false positive cytology in gastric lesions

Cytology is an important adjunct to histology in the diagnosis of gastric lesions, especially where biopsy results are negative or when stricture prevents adequate sampling. False-positive and false-negative diagnoses are the bane of any cytology laboratory. This study was undertaken to identify such discrepancies in gastric cytology in our laboratory, and the reasons for the same.

A retrospective study of 297 patients, who had gastric cytology as part of their investigations and in whom adequate follow up was available, formed the basis of this clinico-cytologic review. All the smears were collected at the time of upper gastrointestinal fiberopitic endoscopy or a five-year period (1991-95). The smears were fixed in ether-alcohol solution and stained by modified Papanicolaou technique. Clinical data were obtained from the records.

On review of clinical and follow up information (including histology), 56 discrepant cases were identified. The cytology smears in these cases were carefully reviewed. Sampling and interpretative errors contributed almost equally to the errors in diagnosis (Table). Those with sampling error did not reveal any malignant cells on review. Screening and interpretative errors were picked up on review. Lymphomas were especially prone to be missed when excess of inflammation was present. In two cases signet ring cells were wrongly identified as macrophages, because the excess mucin obscured the nuclear details. Repair and regenerative changes in peptic ulcer resulted in two false-positive diagnoses: no major surgery was performed in either. The overall accuracy rate of 94.5% in this series compares well with that reported in the literature.

Gastric cytology, although useful in the diagnosis of gastric lesions, has limitations. To avoid sampling errors, the endoscopist should pay attention to technique. To minimize screening errors, the cytologist must screen the smears carefully, especially in the presence of excess of inflammation or hemorrhage. Some interpretative errors are unavoidable even in experienced hands, especially in relation to gastric ulcers, as the cells shed from the regenerating hyperplastic epithelium at the edge of the ulcer, where enlarged cells with hyperchromatic nuclei and prominent nucleoli are present. Thus when the cytologic findings fall short of a definitive diagnosis of carcinoma, it appears safe to raise this suspicion if dysplasia is evident. Therefore cytology should be evaluated along with other clinical and endoscopic findings to prevent unnecessary surgery. Histology is not always the gold standard since similar errors have also been reported in biopsies.

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References

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Cecal volvulus: surgical options

We would like to share our experience with 12 cases of cecal volvulus (9 men; mean age 47.7 years) seen over a 6-year period. All patients presented with features of intestinal obstruction. In only one patient was a predisposing factor (caesarean section) identified. Plain abdominal radiographs suggested the diagnosis in 7 patients. All 12 patients were operated on as emergency procedures. Peroperatively cecal gangrene was present in 3 cases and cecal perforation in four. The operative procedures included resection of cecum with primary ileocolic anastomosis (7 cases), cecostomy with cecopexy (1) and only cecopexy (4). Postoperatively cecostomy tube was removed on day 8 with no complication, and stoma closed spontaneously. Two patients died. No recurrence occurred in the mean follow-up of 3.5 years.

Large bowel volvulus is a common cause of acute intestinal obstruction in Eastern Europe, Scandinavia, Finland, Russia, Africa and India. Sigmoid volvulus is the most frequent, followed by cecal volvulus (responsible for approximately 1% of cases of intestinal obstruction); rarely, the transverse colon is involved.

Cecal volvulus occurs when there is congenital failure of fusion of parietal peritoneum and ascending colon. Risk factors implicated in its etiology include high-fi-

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Table: Analysis of discrepant cases in cytology of gastric lesions

<table>
<thead>
<tr>
<th>Final diagnosis</th>
<th>Number</th>
<th>Sampling</th>
<th>Screening</th>
<th>Errors</th>
<th>Excess inflammation/ degeneration</th>
<th>Cell</th>
<th>False positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenocarcinoma</td>
<td>43</td>
<td>22</td>
<td>12*</td>
<td>5*</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>NHL</td>
<td>11</td>
<td>3</td>
<td></td>
<td>6</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Peptic ulcer</td>
<td>2</td>
<td>2</td>
<td></td>
<td>6</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>25</td>
<td>12</td>
<td>11</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

NHL: Non Hodgkin's lymphoma
* 2 cases of signet ring carcinoma misinterpreted as macrophages
* 2 cases missed due to excess hemorrhage

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her diet, abdominal operation, increased peristalsis caused by diarrhea, and distention caused by distal obstruction. Pregnancy or pelvic tumors or cysts that push the cecum out of the pelvis have been cited as predisposing factors.  

Cecal volvulus is more common in females. Abdominal radiograph is suggestive in 45% of cases; the point of the "coffee bean" deformity is directed towards the left upper quadrant. Barium enema may be helpful in difficult cases but need not be performed routinely.

Colonoscopic reduction of cecal volvulus is technically difficult; operation is unavoidable in most cases. At laparotomy, gangrenous bowel is reported in 20% of patients. Such bowel must be resected, but when the cecum is viable, procedures available include detorsion, cecopexy, cecostomy, cecostomy with bowel fixation, and resection. Simple reduction of volvulus without cecal fixation is associated with high recurrence rate. Cecopexy has the advantage of no contamination and usually no recurrence. Todd and Forde advocate cecostomy to accomplish cecopexy and intestinal venting without recurrence. The cecostomy tube can be removed in the second week.

In conclusion, resection of bowel is the method for gangrenous cecum but for viable cecum, cecopexy with or without cecostomy is equally effective and was associated with no recurrence in our series.

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References

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Ciprofloxacin-resistant Salmonella senftenberg in North India

Salmonella senftenberg, a causative agent of diarrhea, septicaemia, meningitis and urinary tract infection, is being increasingly isolated in hospitals in India. With the emergence of multidrug-resistant salmonellae, ciprofloxacin became the drug of choice for cases requiring antimicrobial therapy. However, ciprofloxacin-resistant strains of S. typhi and S. typhimurium have emerged. We report ciprofloxacin-resistant S. senftenberg from cases with gastroenteritis admitted to a tertiary-care hospital.

A total of 3500 stool specimens from cases with gastroenteritis were received between January 1994 and January 1998. Pathogens were isolated and identified on the basis of conventional biochemical and serological methods. Antimicrobial susceptibility was tested by the modified disc diffusion method of Stokes. The antibiotics used (Hi Media Ltd, Mumbai) and concentrations per disc (mg) were amoxicillin (30), amikacin (10), cefotaxime (25), gentamicin (10), furazolidone (30), nalidixic acid (30), chloramphenicol (10), cotrimoxazole (25) and ciprofloxacin (5). The MICs of ciprofloxacin-resistant strains of S. senftenberg were determined by a macrodilution method using Mueller-Hinton broth (Difco, USA) and a standard inoculum of 10⁵ cfu/mL. For antibiotic sensitivity tests, the standard control strain used was Esch. coli NCTC 10418.

Bacterial pathogens were isolated in 315 cases. Of these, S. senftenberg was positive in 35 (11.1%) cases. Nineteen S. senftenberg strains (54.28%) were resistant to amoxicillin, nalidixic acid, gentamicin, cotrimoxazole, furazolidone, chloramphenicol, cefotaxime and ciprofloxacin (Table). The MIC of ciprofloxacin-resistant strains was ≥4 mg/mL. All these strains were susceptible to amikacin.

Table: Resistance pattern of S. senftenberg (n=35)

<table>
<thead>
<tr>
<th>Antimicrobial drugs</th>
<th>No. resistant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotrimoxazole</td>
<td>33</td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>30</td>
</tr>
<tr>
<td>Nalidixic acid</td>
<td>30</td>
</tr>
<tr>
<td>Gentamicin</td>
<td>30</td>
</tr>
<tr>
<td>Cefotaxime</td>
<td>30</td>
</tr>
<tr>
<td>Chloramphenicol</td>
<td>30</td>
</tr>
<tr>
<td>Furazolidone</td>
<td>30</td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>19</td>
</tr>
<tr>
<td>Amikacin</td>
<td>0</td>
</tr>
</tbody>
</table>

Considering the self-limiting nature of Salmonella enteritidis, antimicrobial therapy is usually not recommended, yet it is important to know the sensitivity pattern of S. senftenberg as it may be required for other invasive manifestations of this organism. Further, the appearance of resistance to ciprofloxacin in strains of S. senftenberg should be an alarming signal for physicians in developing countries.

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References

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