Results
During the 6-month study period, gastric biopsy specimens from a total of 82,709 endoscopies were obtained from 81,648 unique patients. Among this group, a total of 54.2% of all gastric biopsies were classified as “typical” or “atypical.” Helicobacter pylori-positive gastric biopsies were identified in 7,663 patients, which comprised 9.2% of all gastric biopsies obtained, and a subset of consecutive typical cases, were evaluated for a number of histologic parameters, including chronic inflammation, presence of lymphoid aggregates, and presence of active inflammation.

The patient groups with typical and atypical gastritis biopsies had milder degrees of chronic inflammation, presence of lymphoid aggregates, and presence of active inflammation.

The patient groups with typical and atypical gastritis biopsies were compared with respect to clinical, endoscopic, and histologic features.

Table 1 - Association of H. Pylori gastritis with clinical and endoscopic features

<table>
<thead>
<tr>
<th>Clinical Feature</th>
<th>Typical</th>
<th>Atypical</th>
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<tbody>
<tr>
<td>Male gender</td>
<td>38.2%</td>
<td>37.3%</td>
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<tr>
<td>Age (years)</td>
<td>51.4</td>
<td>51.9</td>
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<tr>
<td>Indication for endoscopy</td>
<td>5.9%</td>
<td>7.2%</td>
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Methods, cont.
All H. pylori-stained positive gastric biopsies were classified as “typical” or “atypical.”

- Typical cases were those demonstrating the characteristic chronic active gastritis with abundant H. pylori organisms (Figure 2A).
- Atypical cases were those in which H. pylori organisms were detected on the specially stained slides, but if no special stains (either immunohistochemical or histochemical) had been routinely employed, none would have been visualized, and the cases would have been incorrectly diagnosed as H. pylori-negative. Atypical cases were further categorized as follows:
  1. Rare Organisms: Active gastritis was present, but only extremely rare organisms (10 or fewer per specimen) were detected by special staining (Figure 2B).
  2. Minimal gastritis: Chronic inflammation was either absent or mild, and lymphoid aggregates and no active inflammation were present (Figure 2C).
  3. Dysentery: Only organisms confined to the deeper portions of the pyloric glands or within the canalculus of parietal cells (Figure 2D).
  4. Body only: Antral biopsies were negative for organisms, but biopsies of the body were positive.

All gastric biopsies received over a 6-month period were routinely stained with hematoxylin and eosin (H&E) and stained with either (1) the H. pylori or the special stain had not been immediately available, what percentage of Helicobacter-infected cases would we have missed?

Study Highlights
- Atypical histological features are present in 11% of cases of Helicobacter gastritis.
- The most common types of atypical infection involved rare organisms and absent or minimal inflammation.
- In a significant proportion of instances the organisms would have escaped detection without a routine special stain because the histologic features were insufficiently distinctive to elicit suspicion.
- An explicit or implicit request to rule out H. pylori infection accompanied more than half of the biopsy specimens in our study group. In these cases the pathologist had the ethical obligation to use the best available methods to comply with the request.
- The need to minimize the number of missed infections is best understood in light of the clinical (risk of dyspepsia, peptic ulcer, cancer, and lymphoma) and public health implications (potential source of infection, particularly to relatives) of the failure to diagnose and treat Helicobacter infection.

References