

**Faeco-histological Method of Studying Worm Endemicity with the Vermiform Appendix****W. I. B. Onuigbo***The Medical Foundation and Clinic, Uwani, Enugu***ABSTRACT**

Worms are endemic in various parts of the world, the patterns varying from community to community, even in the same country. A rough index of those common among Nigerians of the Igbo ethnic group has been obtained using a histological study of the ova present in the luminal faeces of the vermiform appendix in 559 operative specimens. Eighteen patients (3%) manifested 56 ova, which were identified as ascaris 29, trichuris 18, hookworm 6 and schistosome 3. It is hoped that the faeco-histological method will throw comparative and useful lights on some research worthy questions in different communities all over the world (*Nig J Surg Res 2000; 2:105-107*)

*KEY WORDS: Worm endemicity, appendix, faeces, histology*

**Introduction**

Over the years, there has been much interest on the vermiform appendix in eastern Nigeria.<sup>1-7</sup> This paper introduces the concept of combining routine histology of the appendix with scrutiny of the luminal faeces for ova, that is, the faeco-histological method. It is hoped that this method will throw more light on research worthy questions which are of interest in geographical parasitology and pathology.

**Materials and Method**

The vermiform appendix removed surgically from Igbos in eastern Nigeria were processed by technical staff and studied by the author at a central laboratory. A random cross section was cut and processed from each third of the appendix. The faecal matter left in the appendix lumen of each section was examined for the presence of ova, which were identified according to standard textbook illustrations.<sup>8</sup>

**Results**

Forty-five doctors sent the appendix specimen removed in 12 hospitals from 559 Igbo patients. There were 378 females and 181 males (M: F of 1:2.1). The age range was 16 days - 75 years. Eighteen specimens (3%) manifested 56 ova, which were identified as ascaris 29, trichuris 18, hookworm 6 and schistosome 3. Those affected were 12 females and 6 males aged 14 years - 50 years. Seven specimens exhibited a single ovum. The highest ova count of 8 was encountered in a 27-year-old woman. Three specimens harboured both ascaris and trichuris ova and the combination of ascaris and hookworm was seen in 2. Twelve specimens had ova in only one of the 3 random sections, 5 had ova in 2 sections and one had ova in all 3 sections.

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No positive case was found in December, single cases were seen in May, June, September and November. Two cases were noted in January, March, April, July and October and 3 in February.

## Discussion

Faeces provide the routine material for investigating the endemicity of worms.<sup>9</sup> The author is not aware of any report on the faeco-histological method of investigating the appendix. One report from Tanzania,<sup>10</sup> concentrated on the presence of intramural schistosome ova, alluding to the possibility of the ova being shed into the lumen. Another report,<sup>11</sup> generalised that 6.5% consisted of specimens in which parasite worms or their ova, were discovered, but there were no details as to the presence of ova in luminal faecal matter. Clearly, the figures in the present report are few. If serial sections of the appendix could be processed, the proportion of positive cases could rise appreciably. Furthermore, extracting the faecal matter from the entire lumen and subjecting it to the concentration methods of parasitology<sup>12</sup> would give the best egg load carried by the appendix.

This method has important benefits. Thus, while obtaining the routine answers expected from histopathology, answers can also be obtained from helminthology. It may well be that the 4 types of worm ova identified in the present report are those endemic in this community. It is important to note that the pin worm cannot be identified by this study as it lays eggs, not in a haphazard manner but in strict proximity to the anus, wherein it can be extracted with extra care.<sup>12</sup>

There is an interesting speculation. Perhaps, ova will be found significantly more often in cases with limited acute appendicitis than in those with complete acute appendicitis. Howie,<sup>13</sup> proposed this classification noting that, useful clinicopathological research may proceed from it. There is at least one question open to such research. Thus, if it is accepted as

before,<sup>14</sup> that there are spasmodic contractions of the inflamed appendix, it is probable that trapped ova would be discharged into the caecum by the time that acute appendicitis must have reached the complete stage.

The question of monthly variation arises. There is Himachal Pradesh,<sup>15</sup> which is reputed to be so "snow-bound from October to may" that "people pass and collect the excreta in one room of the house during winter and spread it as manure in the fields during spring and summer and this work is done by females". Accordingly, the faeco-histological method may pay dividends not only in relation to the months of investigation, but also the sex of the patients. A further advantage of this method is that it is permanently stained and therefore available for study for long periods. To achieve this degree of permanence, ova, which are usually deformed, swollen, ruptured or shrunken in a short period, special staining techniques are necessary.<sup>16</sup>

Remembering that there are much wider surgical aspects of parasitic diseases,<sup>17</sup> and that cost is always a limiting factor in epidemiological studies of intestinal parasitoses,<sup>18</sup> any use to which the faeco-histological method may be put should be exploited.

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FAECO-HISTOLOGICAL METHOD OF STUDYING WORM ENDEMICITY WITH THE VERMIFORM APPENDIX

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