DIAGNOSIS OF GIARDIASIS

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Giardia lamblia was first recognized by Leuwenhock of Deift when he discovered it in his own stool in 1681[1]. Examination of the stools is perhaps the oldest and simplest method used for detecting Giardia lamblia. Best results can be expected in three consecutive stools samples. In a study[2] of 670 Giardialamblia positive cases, 76% were positive in the first and 97.6% in the third specimen; but in another study[3] of 37 patients with a history suggestive of giardiasis, stool examination was found to be the poorest method with a positive yield in only 53.8%. An even lower yield was reported by Kamath et al[4] giving a figure of 28.5%. Another method used is the examination of duodenal juice. The duodenal juice can be collected via apolythene tube which has a mercury bag attached at it's lower end, using a Watson modification of paediatric Crosby capsule or through the biopsy channel of the endoscope. Positive results were obtained in 64.2% 47.6% and 15.5% respectively[3-5]. Jejunal fluid has shown a greater yield than duodenal juice. The most recent study of 200 patients undergoing endoscopy in whom duodenal aspirate was collected given a yield of 9%[6]. Avery effective and rapid method of diagnosis is the mucosal impression smears. A positive yield in the range of 57. 1%-92.3% has been reported[3,4]. Biopsy examination is another method of detecting Giardia lamblia trophozoites. Ament[7] reports 100% positivity in small intestinal biopsy in 5 Giardia lamblia positive cases. Biopsy was taken using a miniaturized multipurpose biopsy tube and stained with Giemsa. Hoskins et al[8] report 6 Giardia lamblia cases, 5 of which showed trophozoites on biopsy. One was negative on both biopsy and duodenal aspirate, but cysts were detected in the stools. Two cases with negative stool findings were positive on biopsy. Rubins multipurpose tube was used and biopsy stained with haemotoxylin and eosin. Brandborg et al[1] compared stool examination vs, biopsy in ten patients with symptomatic and asymptomatic giardiasis. Both groups showed cysts in the stool but in only six symptomatic ones giardia was recovered from intestinal lumen. A retrospective study from Newcastle upon Tyne[9] showed trophozoites in 15 out of the 16 biopsy specimens. Out of 13 patients in whom mucosal imprints were obtained, 9 showed Giardia lamblia. In another study[6], out of 200 patients biopsies were taken in 163 patients and trophozoites seen in only 3 patients (1.8%) although duodenal aspirate revealed 9% patients with Giardia lamblia. Two of the patients with proven Giardia lamblia on aspirate, showed trophozoites on biopsy but one patient who was negative on aspiration showed trophozoites in biopsy. In light of these facts, it is felt that a careful stool examination is the key to the diagnosis. But a single search is not enough[10]. Stool examination should be the first diagnostic procedure. Duodenal aspirate should be done in those with repeatedly negative stool tests in whom signs and symptoms are suggestive of giardiasis as suggested by others[10]. Enterotest[5] can be used for aspiration and is less cumbersome but is not available in Pakistan. Impression smears made from fresh aspirate and biopsy give approximately the same yield, but the former is quicker and simpler to perform. Biopsy examination is a tedious and time consuming process but it has the advantage of showing mucosal alterations in the duodenum. These vary from changes in the villous architecture to the presence of lymphocytes and polymorphs in the mucosa. These are not diagnostic of giardiasis, though a reversal of changes has been reported[8] following Atabrine therapy. Naik et al[11] compared 3 stool specimens jejunal aspirates and jejunal mucosal impressions and concluded that absolute reliance on any one of these is not justified. But 3 stool examinations using direct and concentration techniques is adequate and essential. Humoral and cellular immunity are said to play a role in giardiasis and have been described by others[12,13].ELISA test[14] has been developed which utilises the antigen in faeces.

Compared to microscopy its sensitivity is greater than 98% and it is 100% specific, but again this facility is not available to us. Biopsy examination should be the last resort and every specimen should be stained with haemotoxylin and eosin and also with Giemsa before reporting a negative result.

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