

## LETTER TO THE EDITOR

### ANALOGIES IN MEDICINE: WHITE CLAY-PIPE STEM “CIRRHOSIS”

October, 2013

Dear Sir,

**Schistosomiasis** infects approximately 200 million persons and kills approximately 280,000 annually. In the case of a severe *S. mansoni* infection - hepatosplenic schistosomiasis - the external surface of the liver may be smooth, macronodular, or micronodular, but broad tracts of portal fibrosis are obvious upon gross examination. The cut surfaces reveal a widespread fibrosis portal enlargement without distortion of the intervening parenchyma by regenerative nodules. There is usually no hepatic parenchymal cell damage and hepatic function usually remains normal. Many of the portal triads lack a vein lumen, causing presinusoidal portal hypertension and severe congestive splenomegaly, esophageal varices, and ascites<sup>1-3</sup>.

The English pathologist William St. Claire Symmers (1863-1937), who was working at the Kass-El-Ainy Hospital in Cairo, described for the first time in 1904 a new form of cirrhosis of the liver caused by eggs of schistosoma. From post-mortem examinations of diseased livers, Symmers described lesions which he likened to “white clay-pipe stems” at various angles throughout the liver. What we call liver fibrosis nowadays, Symmers called cirrhosis and made the further mistake, understandable at the time, of describing what were surely *S. mansoni* eggs presenting lateral spicules in the hepatic tissue as “the ova of Bilharzia haematobia”. Spindle cells arranged concentrically around the eggs were ringed with fibrous tissue that formed “periportal cirrhosis”<sup>1</sup>.

Symmers’ original description was as follows: “When a portal canal is cut transversely, the mouths of the contained vessels and bile duct are seen embedded in the center of a circular or slightly oval area of white connective tissue, the diameter of the mass being, on average, between a sixth to a quarter of an inch; whereas longitudinal sections of the canal reveals elongated masses of similar appearance and thickness, so that the cut surface of the liver looks as if a number of **white clay-pipe stems** have been thrust at various angles through the organ”<sup>4</sup>. (Port. Fibrose em haste de cachimbo de barro branco. Esp. Fibrosis en boquilla de pipa).

Clay is a soft, sticky earth, which can be molded into different forms and then hardened in ovens. Bricks, pottery, and tile are made of clay. Pipestem is the long, slender stem of a tobacco pipe through which the smoke is drawn.

Subsequently pathologists in various countries, mainly Egypt, Puerto Rico and Brazil have used the terminology coarse periportal fibrosis, axial fibrosis, pipe stem fibrosis, or the best-known term, Symmers’ fibrosis, in dealing with the hepatopathy of advanced Bilharziasis<sup>1</sup>.

Was Dr. Symmers a pipe smoker? We do not know. But, we believe, he was influenced by an old-fashioned white pipe to make this analogy of the liver damaged by schistosomiasis. Anyway, all the textbooks and papers published in the Western World on advanced stage of schistosomiasis always mention the pipe stem fibrosis. It is a consecrated term<sup>3</sup>.



Schistosomiasis of the liver, showing the peculiarly heavy fibrosis of the larger portal tracts that is commonly referred to as ‘pipe-stem fibrosis’ or ‘clay pipe fibrosis’. The fibrosis is the end-result of the granulomatous inflammation evoked by the eggs of *Schistosoma mansoni* (Symmers, W. St. C., *J. Pathol. Bacteriol.* 1904,9:237).

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