

Cirrhosis^{1,2}

Narrative Section

HISTORICAL VIGNETTE - Hearts hold a place of prominence in the world of love, but it wasn't always so. When Shakespeare wrote in his sixteenth century *Romeo and Juliet* that "young men's love lies not truly in their hearts, but in their eyes," his readers doubtlessly understood. But had that play been performed for an ancient Greco-Roman audience, or at a Babylonian theater, the listeners might have been perplexed. The seat of the soul, of love, and of human emotions in cultures before the modern era was thought to be the liver. Clay sculptures from 2000 BCE (FIGURE 1) guided priests and anatomists in understanding this vital organ. The names they gave to its structures survive into modern anatomical terms. Indeed, even Shakespeare might have understood: reports indicate that Queen Elizabeth of the sixteenth century was not referred to as England's *head* of state—but its liver. This vital three-pound organ, holding over 10% of the body's blood supply from two separate sources, sends out distress signals when it is damaged. For the aware clinician, the exam yields signs of cirrhosis.



CONTEXT AND USEFULNESS - Chronic liver disease precedes cirrhosis. When hepatocellular dysfunction is known, based on jaundice or lab abnormalities, specific physical exam findings of the skin, the vasculature, and the nervous system can increase the likelihood of cirrhosis.

¹ Chi J *et. al.* "The Five Minute Moment." *Am J Med.* 2016 Aug; 129 (8): 792-795.

² Carolina Martins. "History of liver anatomy." DOI: 10.1111./j.1477-2574.2012.00555.x 2012.

Physical Maneuver

Model Proper (And Improper) Technique³ - To properly assess the liver, place the patient in a recumbent position with the skin of the abdomen exposed. Note the presence or absence of **dilated abdominal veins** (*caput medusa*). In males, is *body hair reduced*? Is *gynecomastia* present? What about the presence of *spider angiomas* (FIGURE 2) across the abdomen and chest? Each of these findings suggest estrogen excess as the byproduct of poor hepatic function. Next, search for the **presence of ascites**. When the abdomen is distended, the probability of ascites is increased most by discovering the presence of a fluid wave (LR = 5.0) and the presence of edema (LR = 3.8). Palpating a firm liver edge suggests cirrhosis in chronic liver disease (LR = 3.3). Finally, sit the patient up and evaluate for hepatic encephalopathy. In the studies of physical exam signs and cirrhosis, **encephalopathy** was defined as *disordered consciousness plus asterixis*. The conscious patient, with arms outstretched and fingers spread, can be assessed for asterixis by observing for the sudden "flap" of the hands. This occurs when the patient is unable to hold the fixed position. (If necessary, an elevated leg and flexed foot can achieve the same result). EMG studies have demonstrated a "negative myoclonus" occurring during asterixis—a transient interruption of electrical signal to the muscle.



INTERPRETATION - The dilated abdominal wall veins increase the likelihood of cirrhosis most (LR = 9.5), followed by equal measures of reduced body / pubic hair and encephalopathy (both with LR = 8.8), gynecomastia (LR = 7.0), then ascites (LR = 6.6). Angiomas offer a smaller contribution in making the diagnosis (LR = 4.2).

CAVEAT AND COMMON ERRORS - Once a diagnosis of cirrhosis is established, other exam findings may hint at its complications, such as clubbing (LR = 4.0) and cyanosis (LR = 3.6) suggesting hepato-pulmonary syndrome. Asterixis is not specific to patients with chronic liver disease and can be seen with uremia or other metabolic encephalopathies.

³ McGee, Steven. *Evidence-Based Physical Diagnosis, 4th ed.* Philadelphia, PA: Elsevier; 2018.