Characteristic CT Signs of Midgut Volvulus

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Key words: midgut volvulus, whirlpool sign, barber-pole sign, computed tomography

(A Intern Med 53: 517, 2014)
(DOI: 10.2169/internalmedicine.53.1604)

A 74-year-old woman presented with nausea and vomiting lasting for one week. Abdomen radiography showed increased bowel gas (Picture A). Axial enhanced computed tomography (CT) scans of the abdomen (Picture B) revealed a swirl consisting of soft tissue, bowel loops, the superior mesenteric vein (SMV) and superior mesenteric artery (SMA) (whirlpool sign, arrow), and coronal scans (Picture C) demonstrated a corkscrew appearance in the mesenteric vessels (barber-pole sign, arrow), indicating a diagnosis of midgut volvulus. Midgut volvulus results from the failure of normal counterclockwise rotation of the midgut in the developing embryo (1). It is almost exclusively seen in the pediatric population; however, its occurrence in adulthood should not be overlooked (1, 2). The whirlpool sign indicates twisted bowel loops encircling the SMV, which coils around the SMA, while the barber-pole sign indicates twisting of the mesenteric vessels resembling a staff with a helix of colored stripes (1). Importantly, both CT signs are highly suggestive of midgut volvulus (1).

The authors state that they have no Conflict of Interest (COI).

References