



**Figure S1** Radiological features of gallbladder volvulus. (A) Magnetic resonance cholangiopancreatography (coronal axis) showing (I) a distended gallbladder, (II) gallbladder outside its anatomical fossa and (III) pericholecystic fluid. (B) Magnetic resonance cholangiopancreatography (coronal axis) showing (IV) loss of enhancement and (V) abrupt tapering of the cystic duct.

**Table S1** Risk factors of gallbladder volvulus

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Risk factors

Anatomical/hereditary

- Variant cystic mesentery (absent, or abnormally short/long)
- Tortuous and/or arteriosclerotic cystic artery
- Pathological spine (kyphosis, scoliosis)
- Free hepatic lobe
- Lack of coronary and/or triangular ligament(s)

Mechanical

- Sudden changes in body position
- Abdominal trauma
- Peristalsis (stomach, duodenum and colon)

Physiological

- Weight loss
- Loss of fibrous connective tissue (ageing)

Hormonal

- ↑ Cholecystokinin
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# Appendix 1

## **Strategy and selection criteria**

The review of the literature was conducted via PubMed, using the following MeSH terms and keywords: “volvulus” AND “galbblader”, “volvulus” AND “gall-bladder”, “torsion” AND “gallbladder” or “torsion” AND “gall-bladder”. Search was limited to full-text articles published in English, French or German until January 4th 2020. Cross-referencing of the bibliographies from the eligible articles was also performed. All patients with gallbladder volvulus were included. No exclusion criteria were applied.