

## Abstract

The morphology of human gastric ulcer points to anatomical peculiarities of the underlying vascular network in the gastric wall. In three simple models - a network model, a cellular automaton and a PDE - position and geometry of the observed pathological structure can be simulated. The predicted focal disorders of gastric blood flow are due to a supply-demand-conflict at mucosal boundaries. Such variations in blood flow can be reproduced in experimental models. In man they can be predicted by the topographical anatomy of the submucous plexus. These dissipative patterns are consistent with site and form of human gastric ulcer.