Aortic aneurysms : a mechanical instability?  VIRGINIE DUCLAUX, IRPHE, France, FRANCOIS GALLAIRE, Univ. Nice - France, CHRISTOPHE CLANET, IRPHE - France — We study experimentally a system composed of an elastic membrane in which water is periodically flushed from a heart-like pump. Our first interest is the occurrence of waves as opposed to an homogeneous mode of deformation of our membrane. These modes may explain differences in the localization of aneurysms in the body. Then we show the case of an inhomogeneous membrane (in terms of Young’s modulus) submitted to our flow. In a certain range of parameters, our fake artery is able to gradually develop a swollen region that we call aneurysm, and whose cause is mechanical.