Sterile inflammation

Inflammation is vital for host defence against invasive pathogens. In response to an infection, a cascade of signals leads to the recruitment of inflammatory cells, particularly innate immune cells such as neutrophils and macrophages. These cells, in turn, phagocytose infectious agents and produce additional cytokines and chemokines that lead to the activation of lymphocytes and adaptive immune responses. Similar to the eradication of pathogens, the inflammatory response is also crucial for tissue and wound repair (BOX 1). Inflammation as a result of trauma, ischaemia–reperfusion injury or chemically induced injury typically occurs in the absence of any microorganisms and has therefore been termed ‘sterile inflammation’. Similar to microbially induced inflammation, sterile inflammation is marked by the recruitment of neutrophils and macrophages and the production of pro-inflammatory cytokines and chemokines, notably tumour necrosis factor (TNF) and interleukin-1 (IL-1).

Sterile inflammation, a potential target in aneurysmal subarachnoid hemorrhage [1)].

1)
Chaudhry SR, Lehecka M, Niemelä M, Muhammad S. Sterile inflammation, a potential target in aneurysmal subarachnoid hemorrhage. World Neurosurg. 2018 Dec 20. pii: S1878-8750(18)32884-5. doi: 10.1016/j.wneu.2018.12.061. [Epub ahead of print] PubMed PMID: 30580066.