Micrograph showing acute inflammation of the prostate gland with the characteristic neutrophilic infiltration.

The process of acute inflammation is initiated by cells already present in all tissues. At the onset of an infection, these cells undergo activation and release inflammatory mediators responsible for the clinical signs of inflammation. Vasodilation and its resulting increased blood flow causes the redness and increased heat and results in an exudation (leakage) of plasma proteins and fluid into the tissue, which manifests itself as swelling. Some of the released mediators such as bradykinin increase the sensitivity to pain. The loss of function (functio laesa) is probably the result of a neurological reflex in response to pain.

In addition to cell-derived mediators, several acellular biochemical cascade systems consisting of preformed plasma proteins act in parallel to initiate and propagate the inflammatory response.

The acute inflammatory response requires constant stimulation to be sustained. Inflammation ceases once the stimulus has been removed.

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