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GOVT, NOT JUST A DISEASE OF THE FOOT.
LITERATURE REVIEW OF SYSTEMIC DEPOSITION OF URATE

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Background: Gout is the most common adult inflammatory arthropathy in the US. Although tophi in the extremities is a known source of the inflammatory cascade, urate deposition in organs throughout the body is not as well recognized. Patients with gout often have associated comorbidities including renal disease, cardiovascular disease and metabolic syndrome, however, a casual role has not been established. Direct urate deposition in these organ systems may be of interest to link the causality of these systemic disorders.

Objectives: Perform a literature review including clinical exam, autopsy, pathology, and radiology imaging results demonstrating systemic deposition of urate exclusive of the extremities.

Methods: PUBMED from 1920 to 2018 was searched to identify reports of non-extremity urate deposition. Key words included: extra-articular gout, systemic deposition of urate, ocular gout, gout nephropathy, renal tophi, gouty heart, cardial valves and urate, urate deposition in the arteries, prostate and urate, autopsy findings in gout, cutaneous urate deposits, gouty panniculitis, auricular gout, breast and urate, gastrointestinal gout, pancreas and tophus, laryngeal tophus, and spinal gout. The reference lists from these publications were also used to identify additional articles. The literature was reviewed for organ system involvement and documented based on sites of urate deposition within an organ system.

Results: There were 249 case reports documenting non-extremity urate deposition confirmed by autopsy, biopsy, surgery, clinical exam and/or radiology imaging. Urate deposition was reported in multiple organ systems (Table 1) including the spine, integumentary, ocular, renal, cardiovascular, gastrointestinal, larynx, breast, middle ear, pancreas, nasal, prostate gland, liver, pulmonary, penis, nailbed, and pelvis.

Conclusion: Numerous case reports document systemic deposition of urate based on autopsy, pathology, imaging and clinical exam. Urate crystal deposition with the formation of tophi and micro-tophi involve multiple organ systems including cardiovascular, renal, spine, integumentary, prostate, bowel, pancreas, eyes, pelvic, breast, lungs, middle ear, larynx, liver, penis, nailbed, and nose. Given the strong association of gout with various comorbidities, this demonstrates a need for further studies to determine the clinical significance of systemic urate deposition with respect to ongoing subclinical inflammation and potential end-organ damage.

REFERENCES