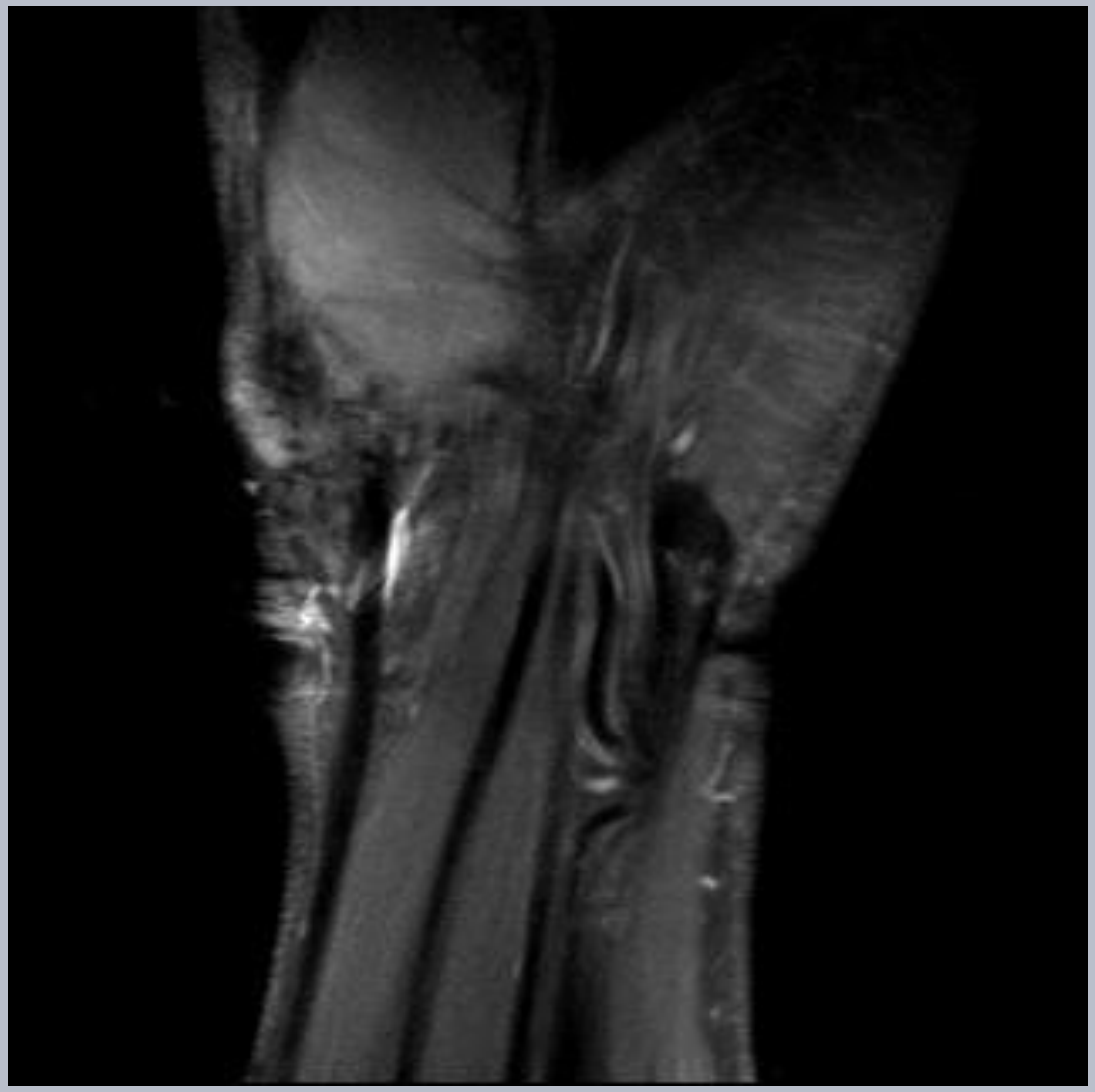
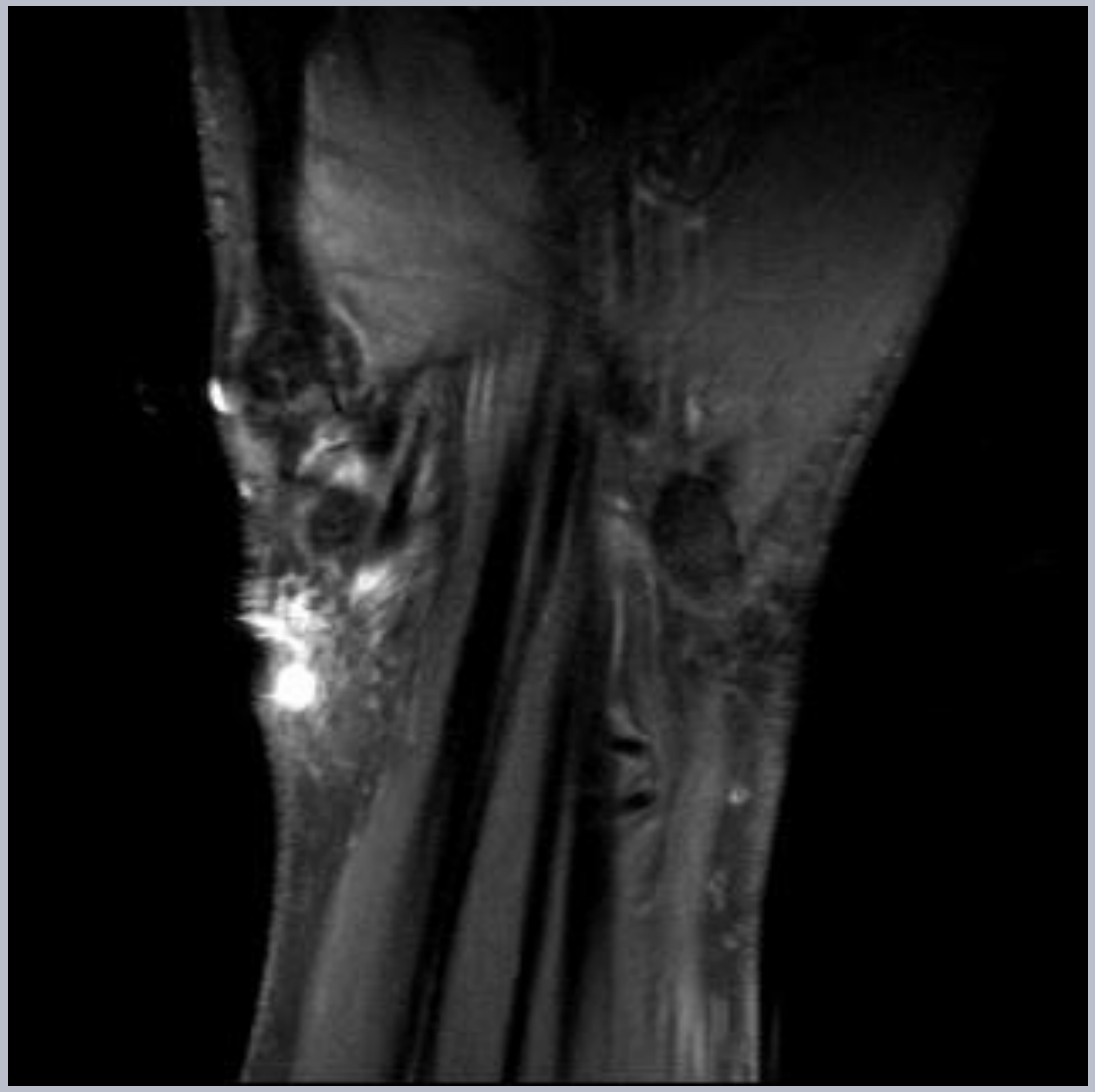
History

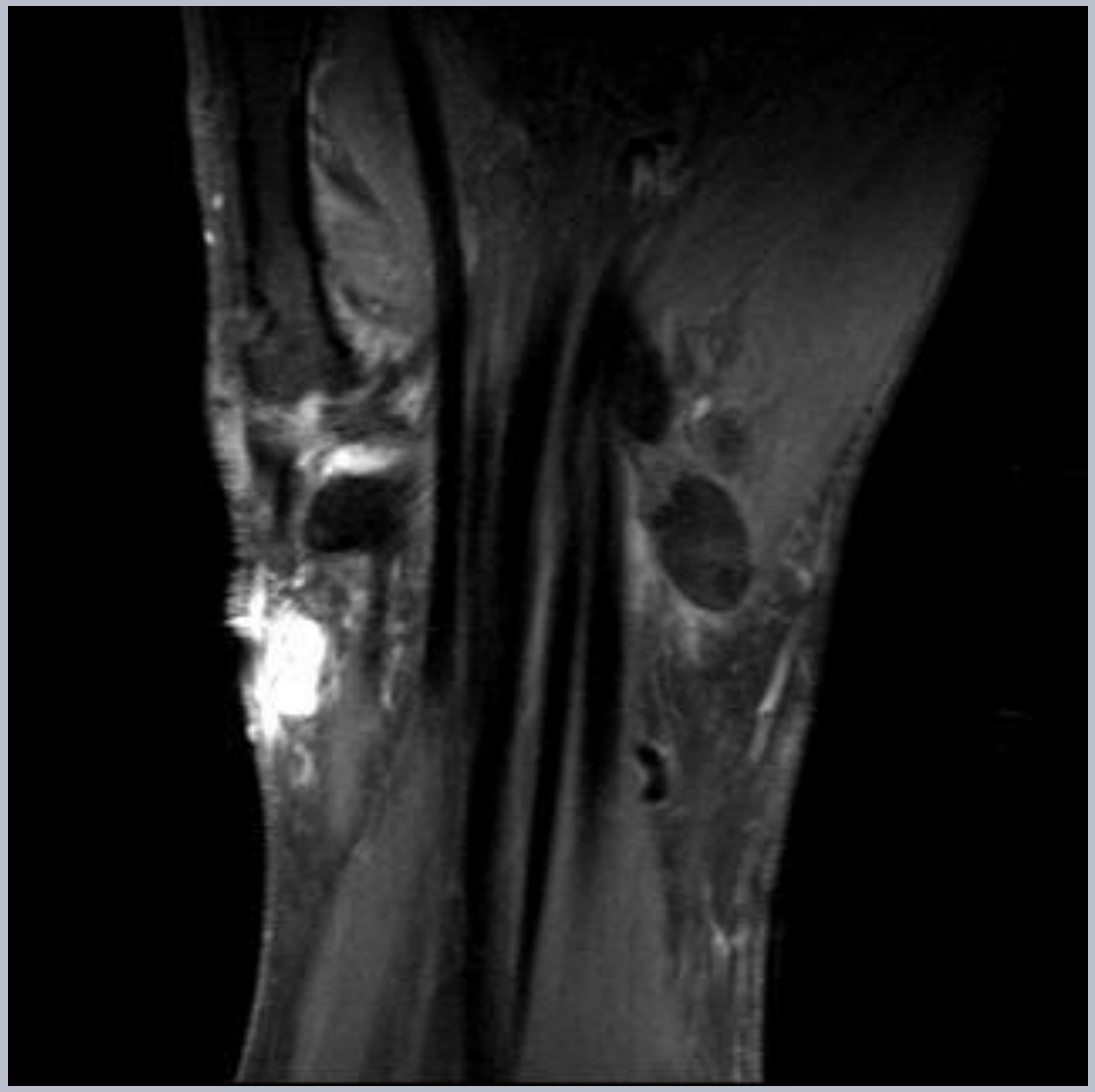
- 63-year-old female with increasing right wrist pain over 18 months of uncertain etiology
- History of trapeziectomy, tendon interposition, and ligament reconstruction surgery

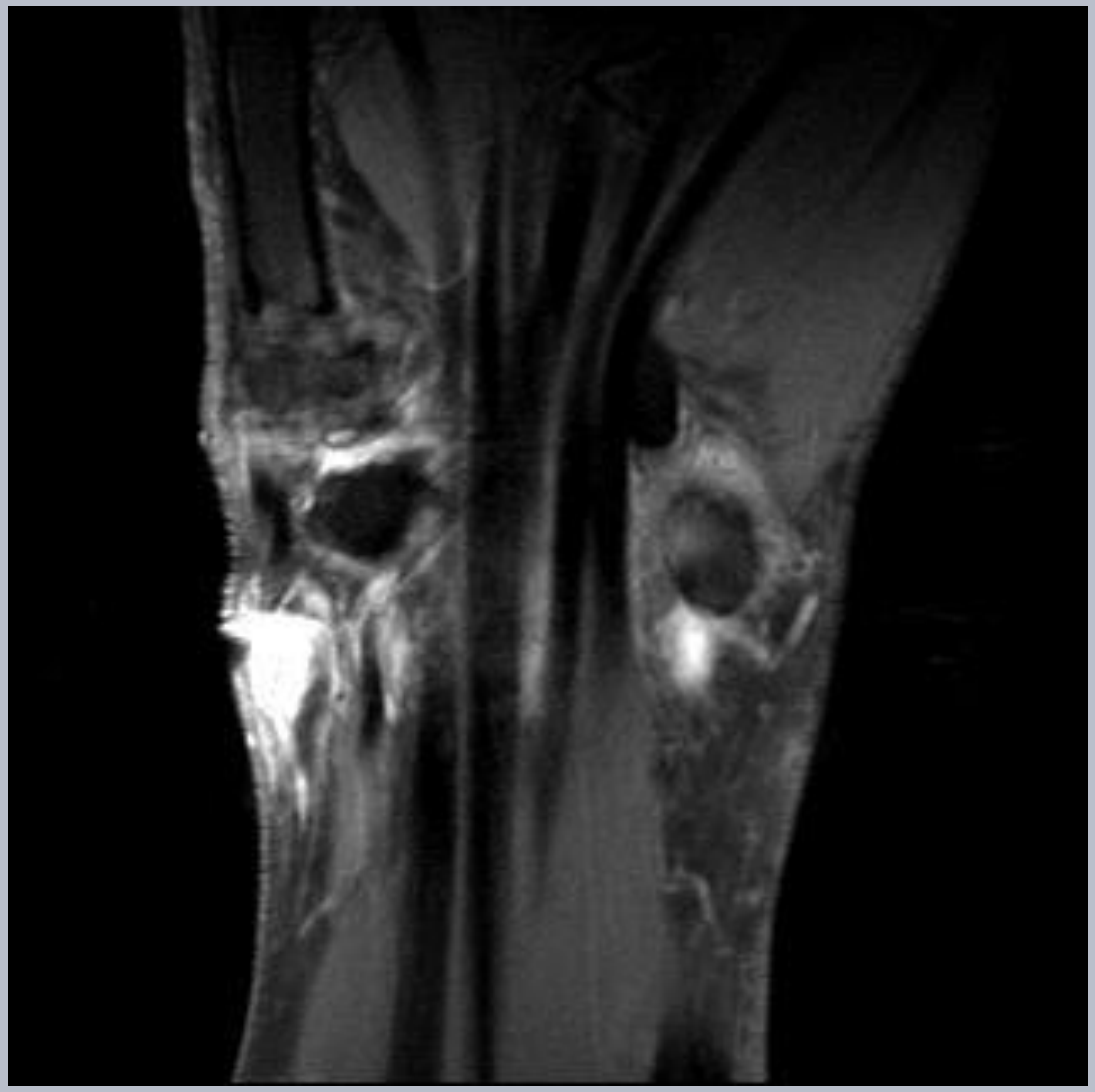
Imaging

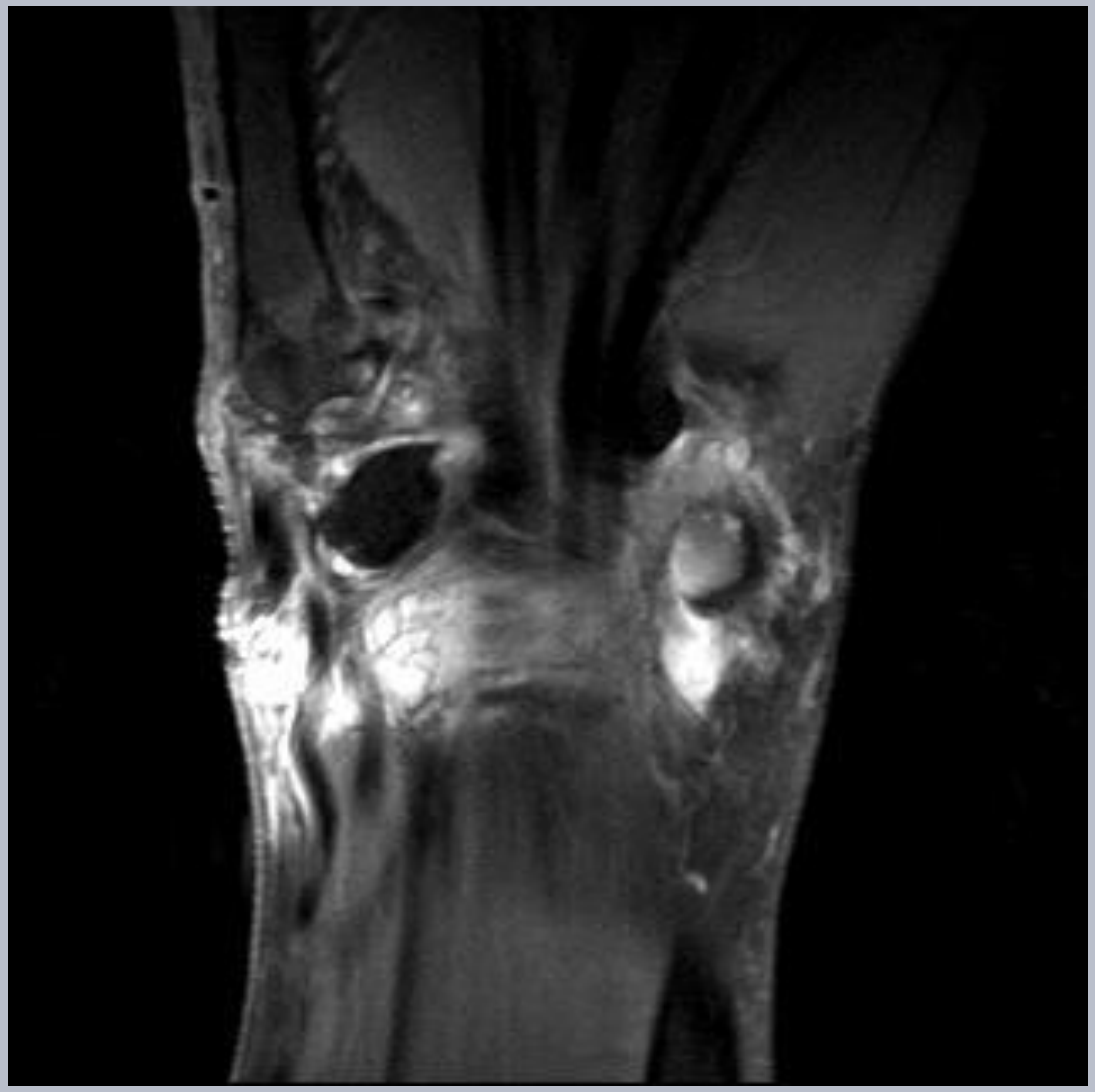
- MR arthrogram of the right wrist

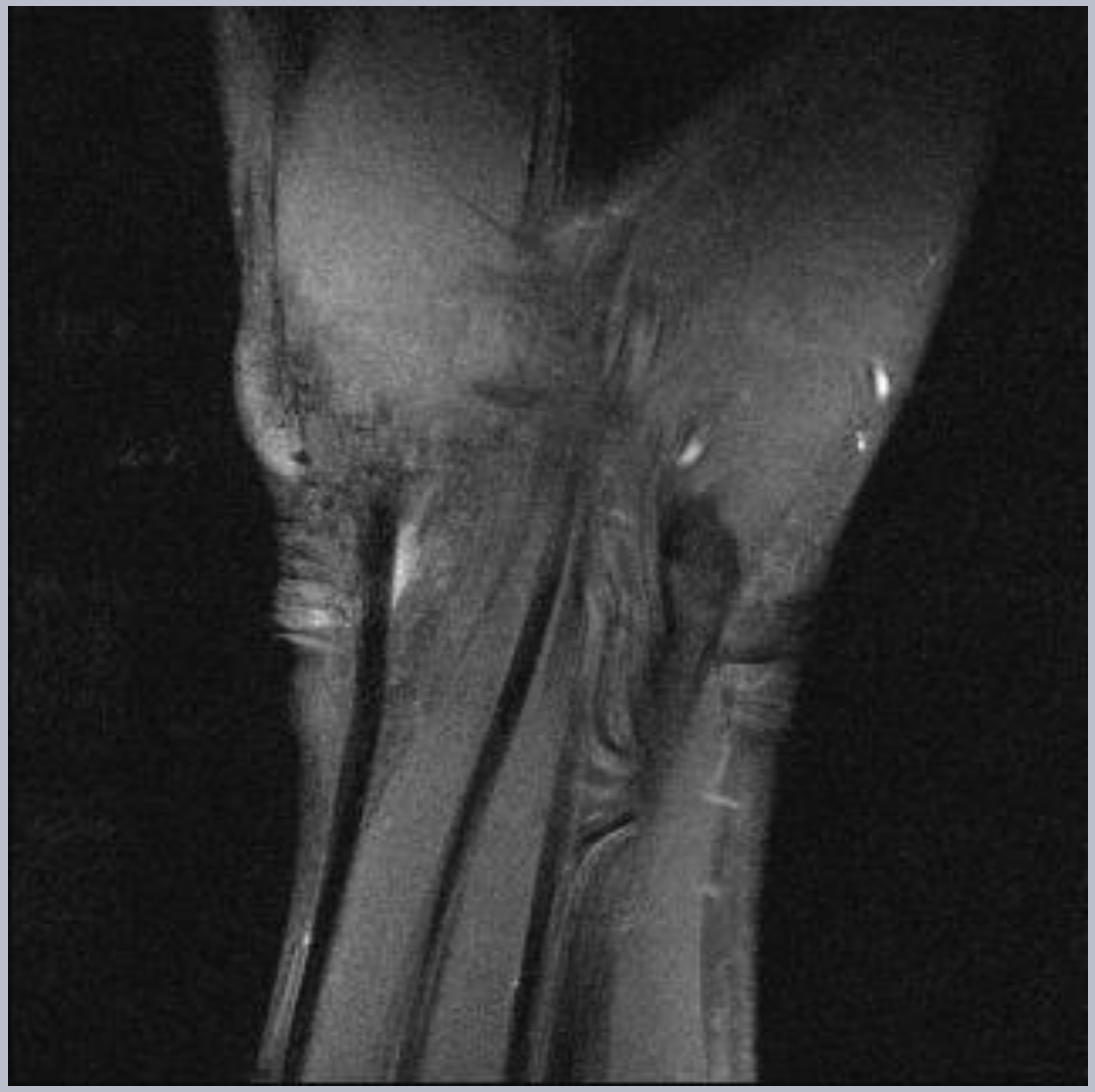


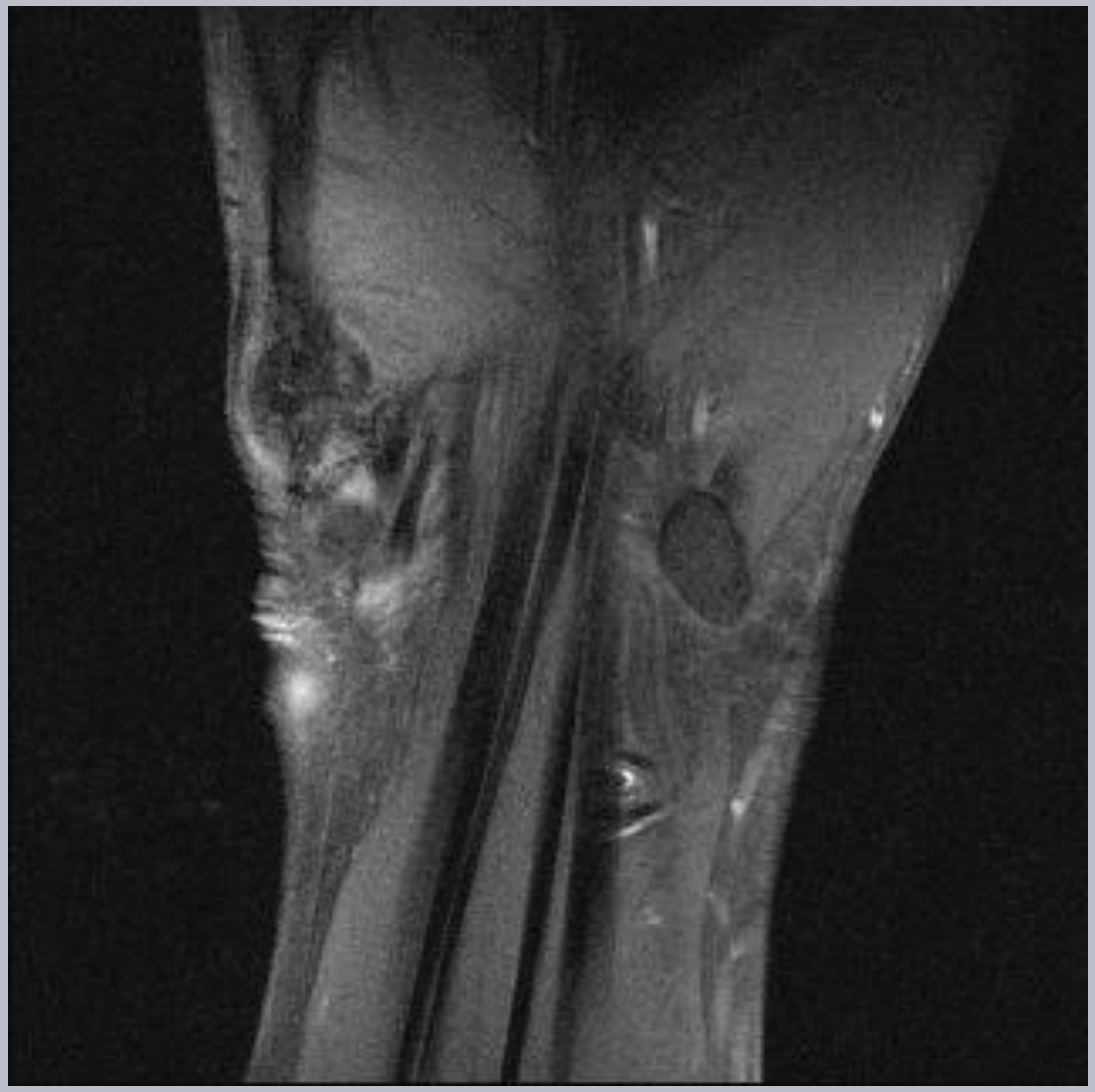


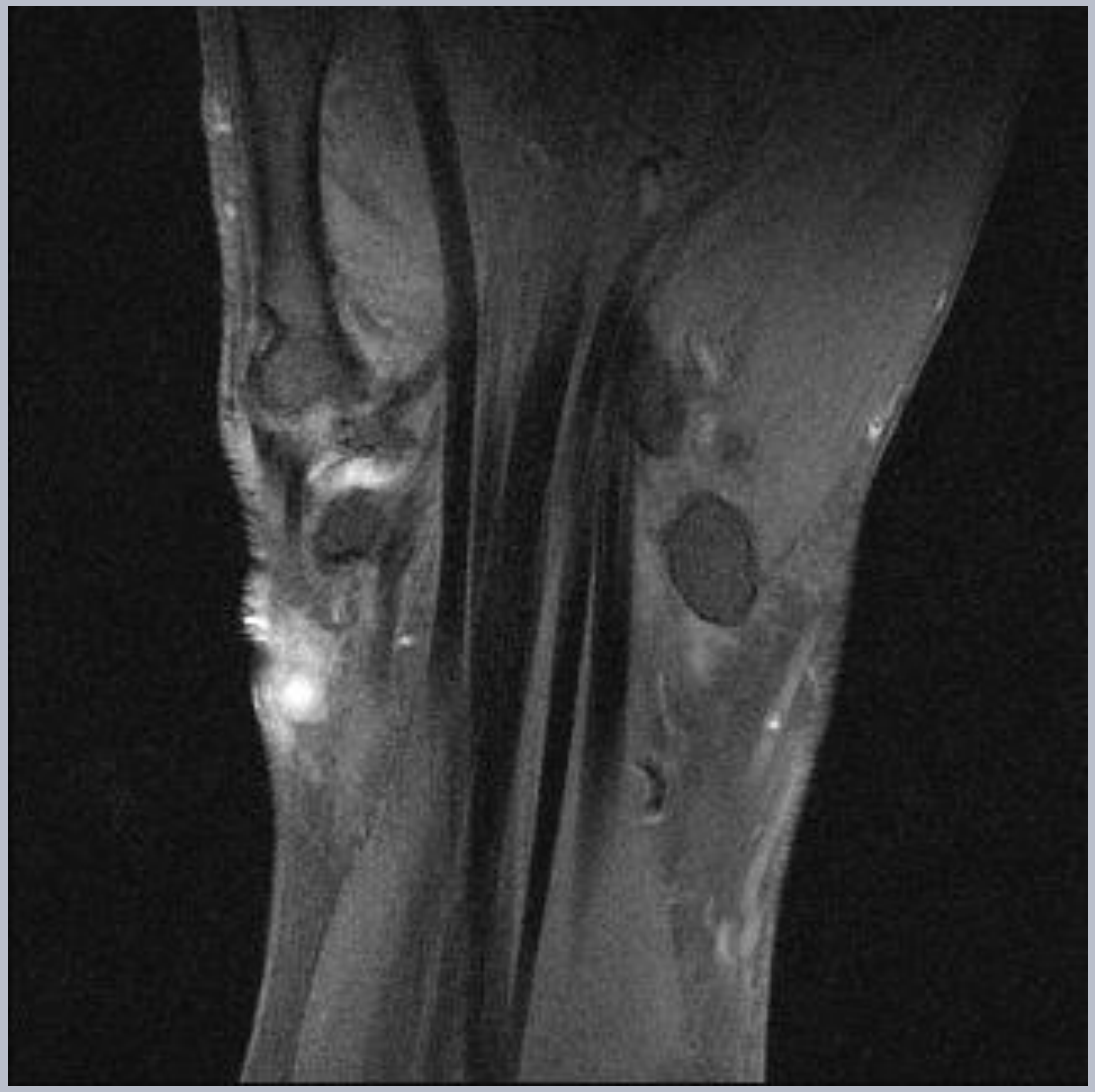


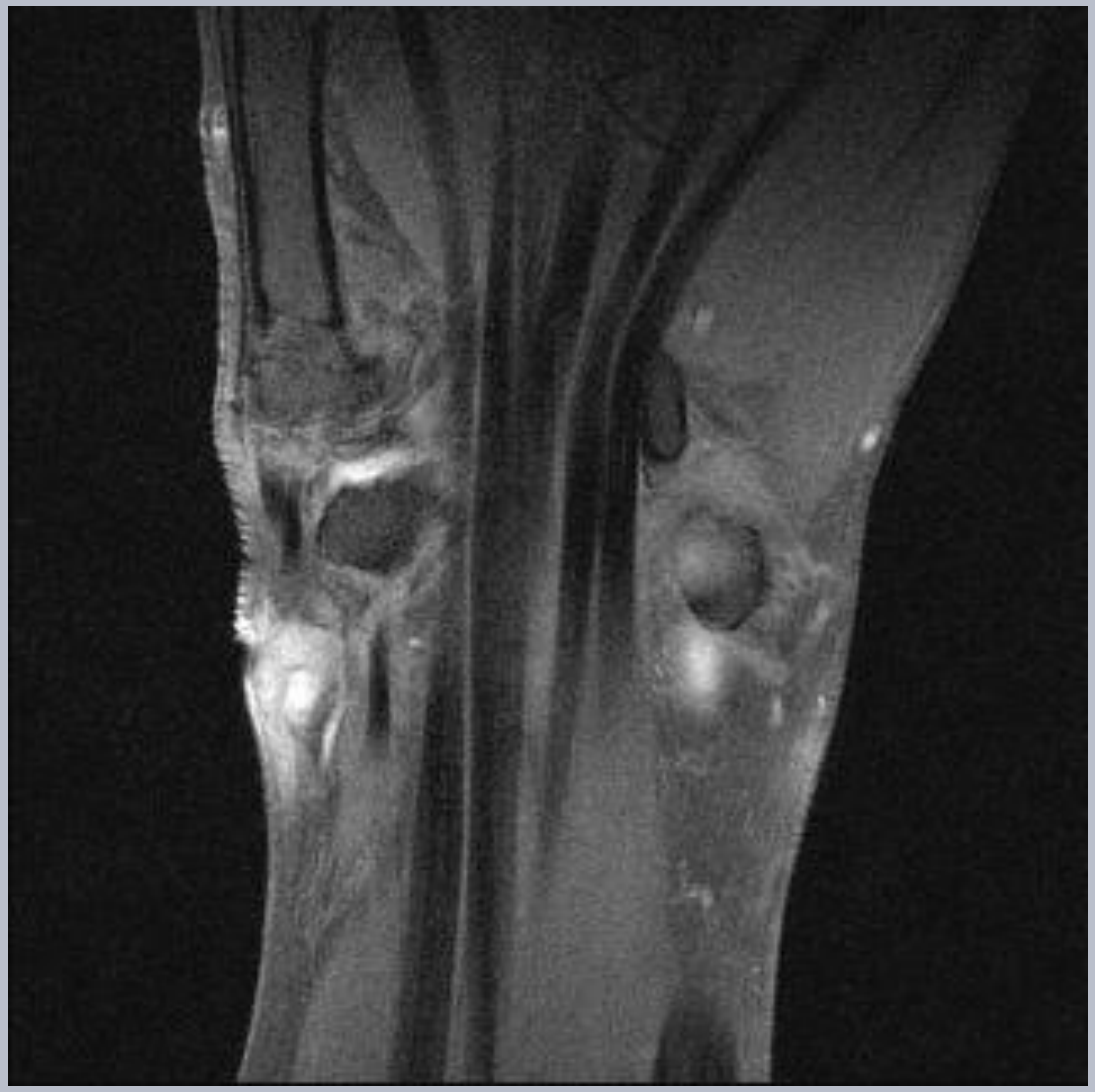


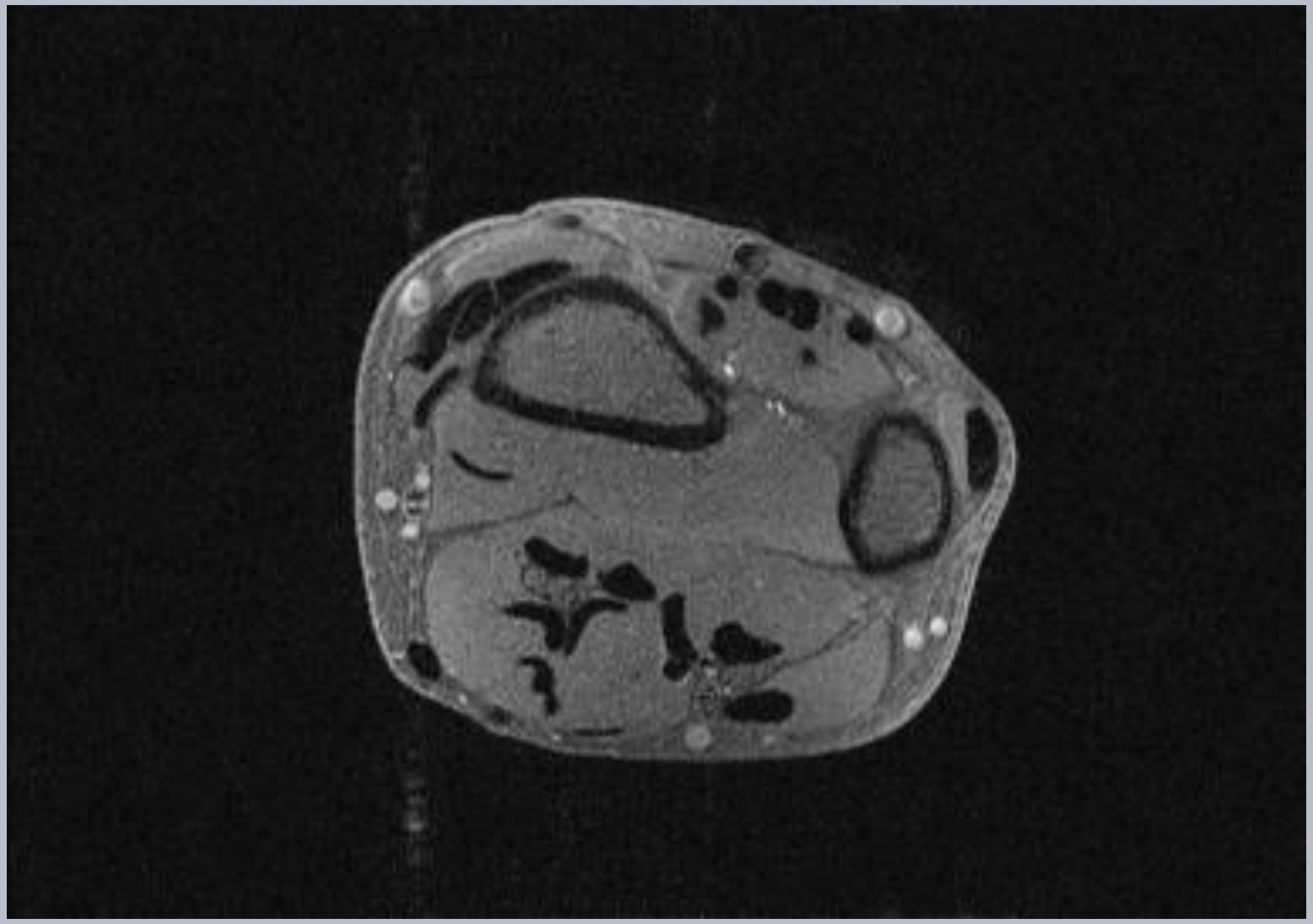


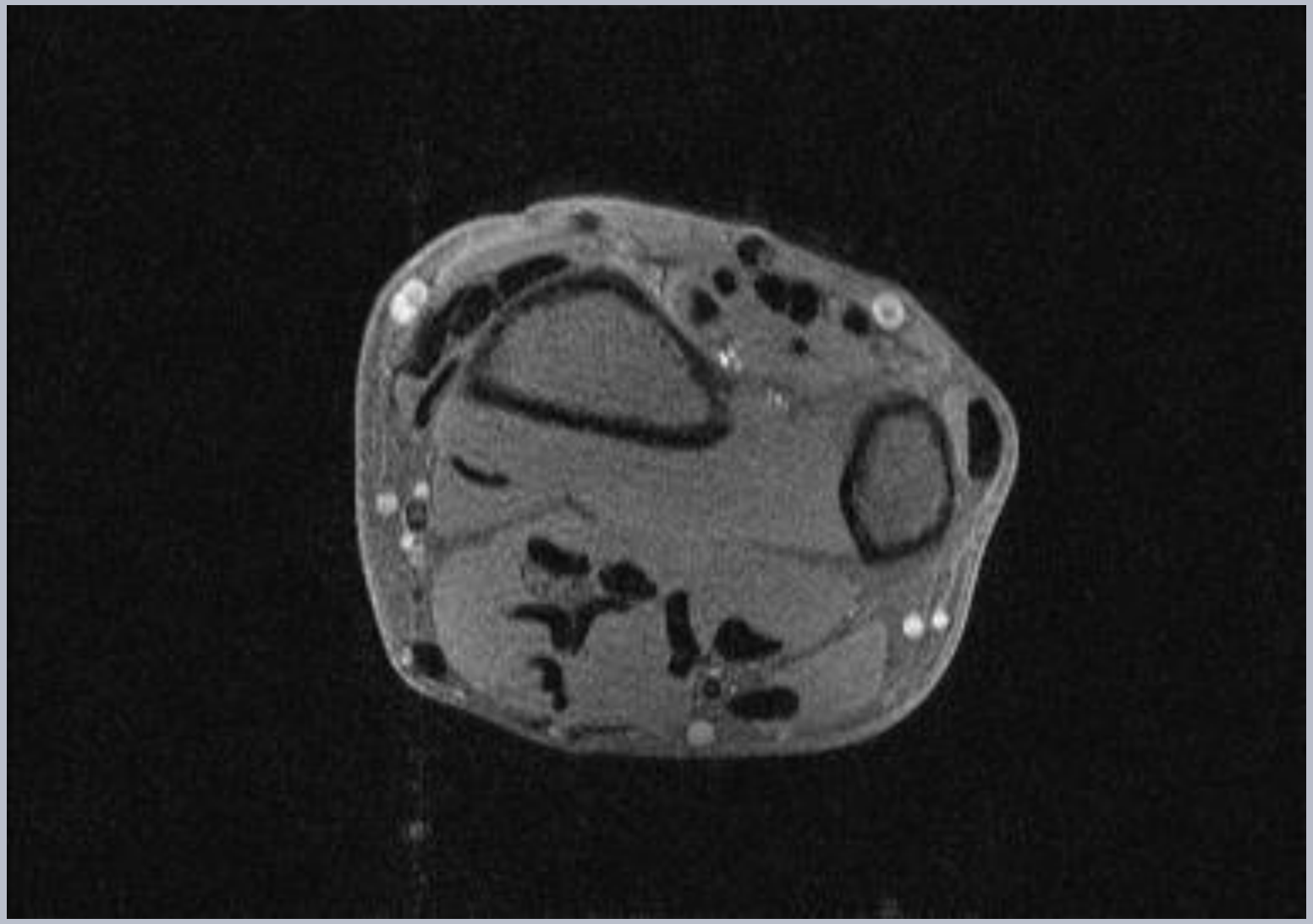


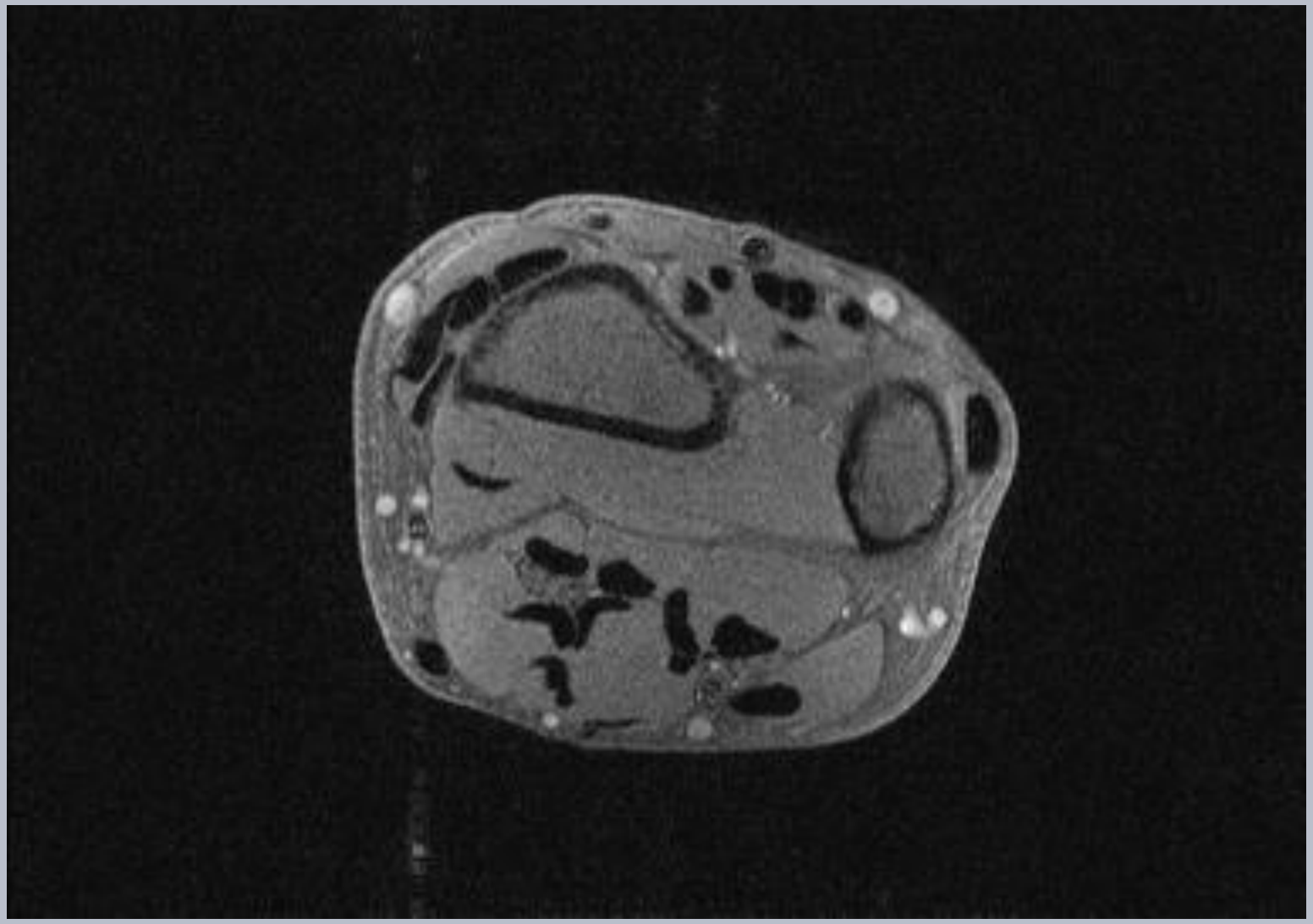


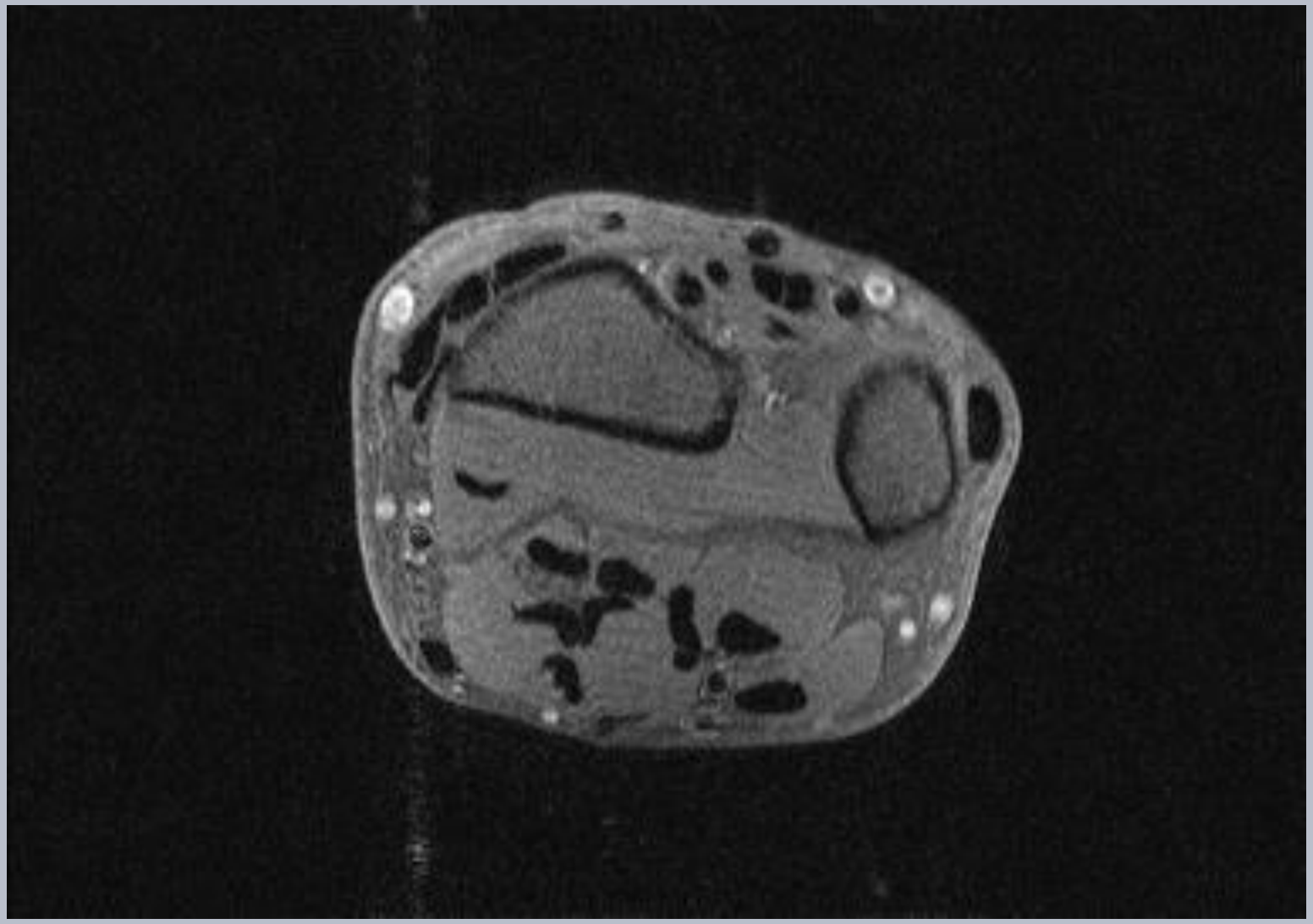


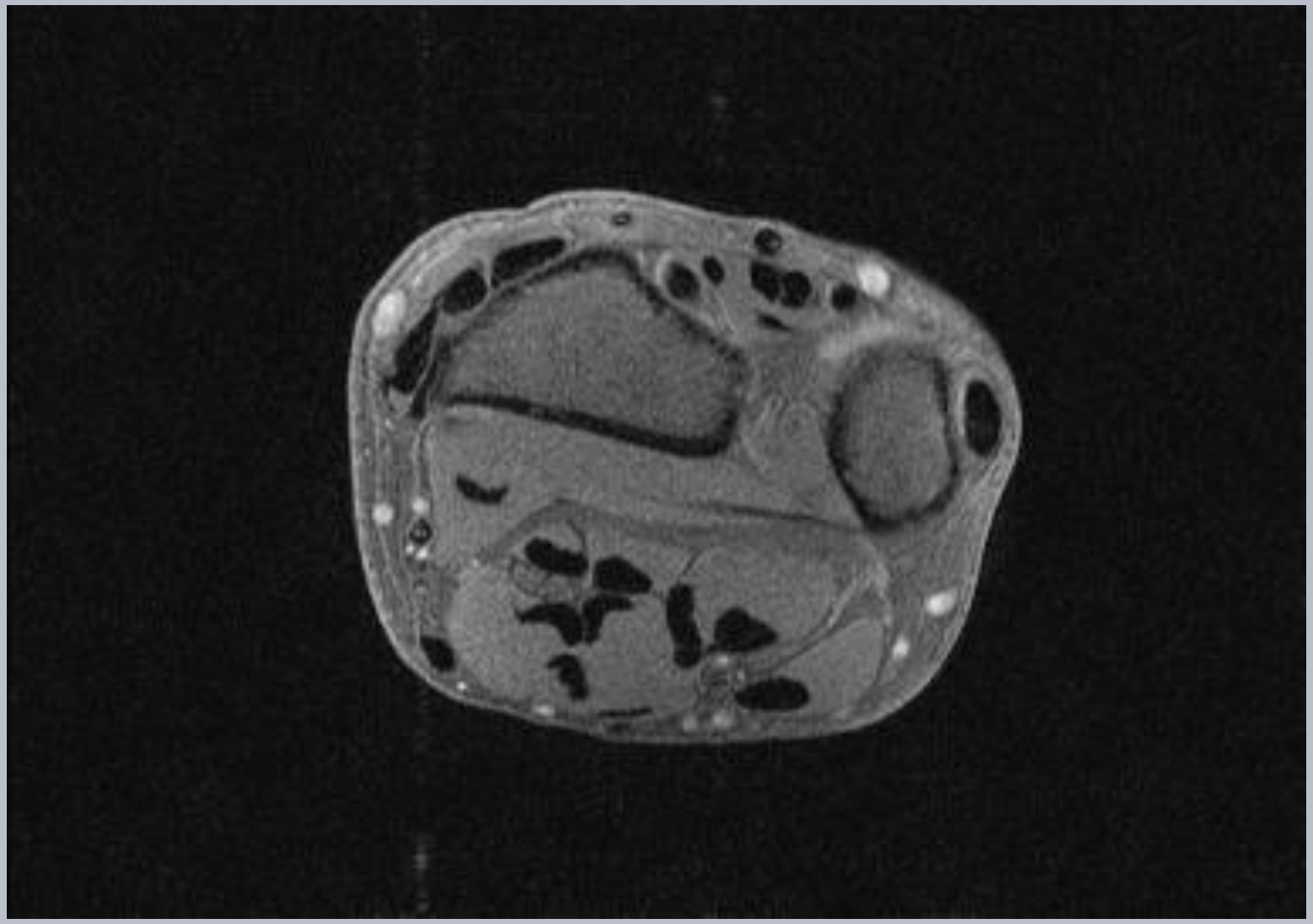


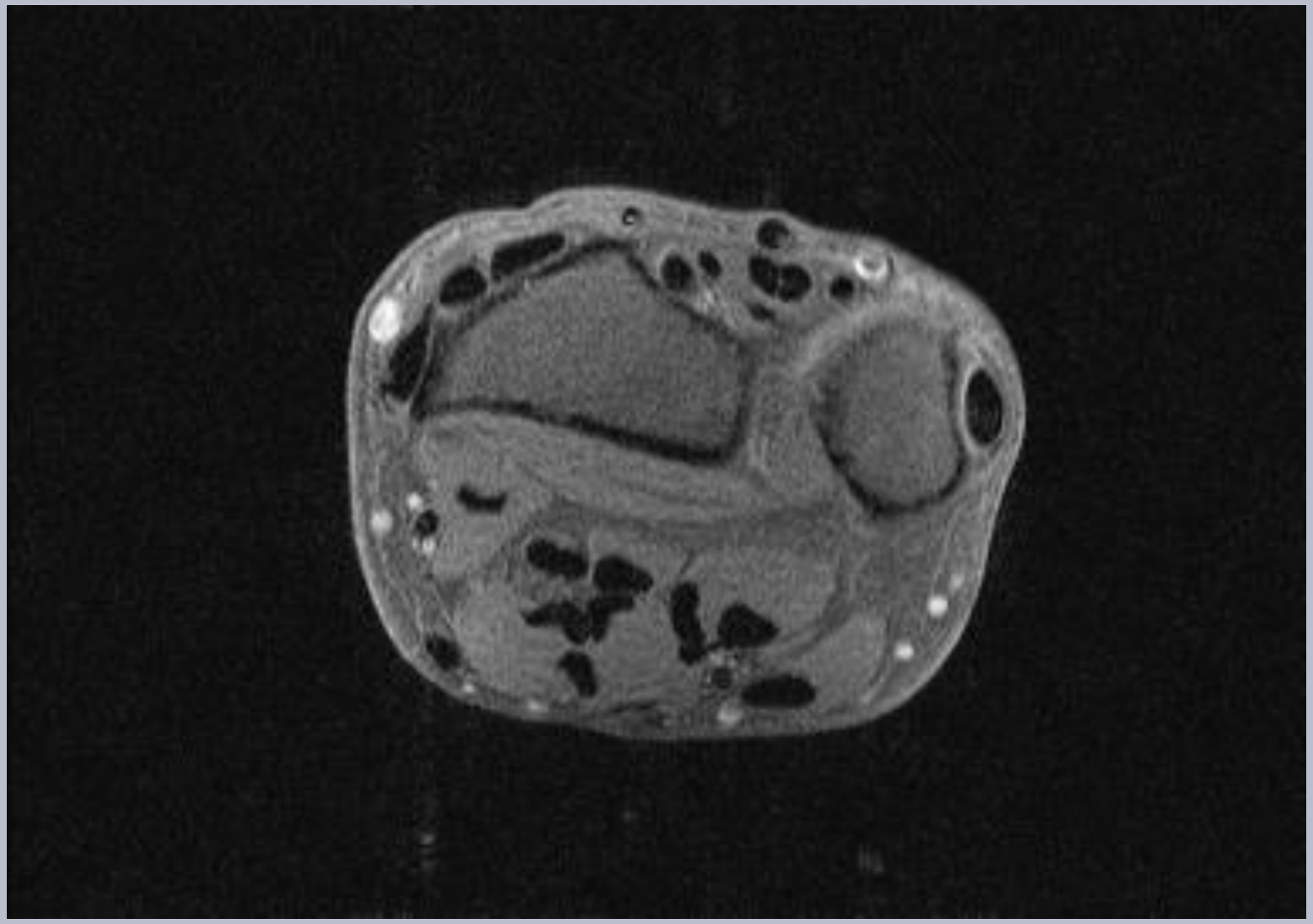


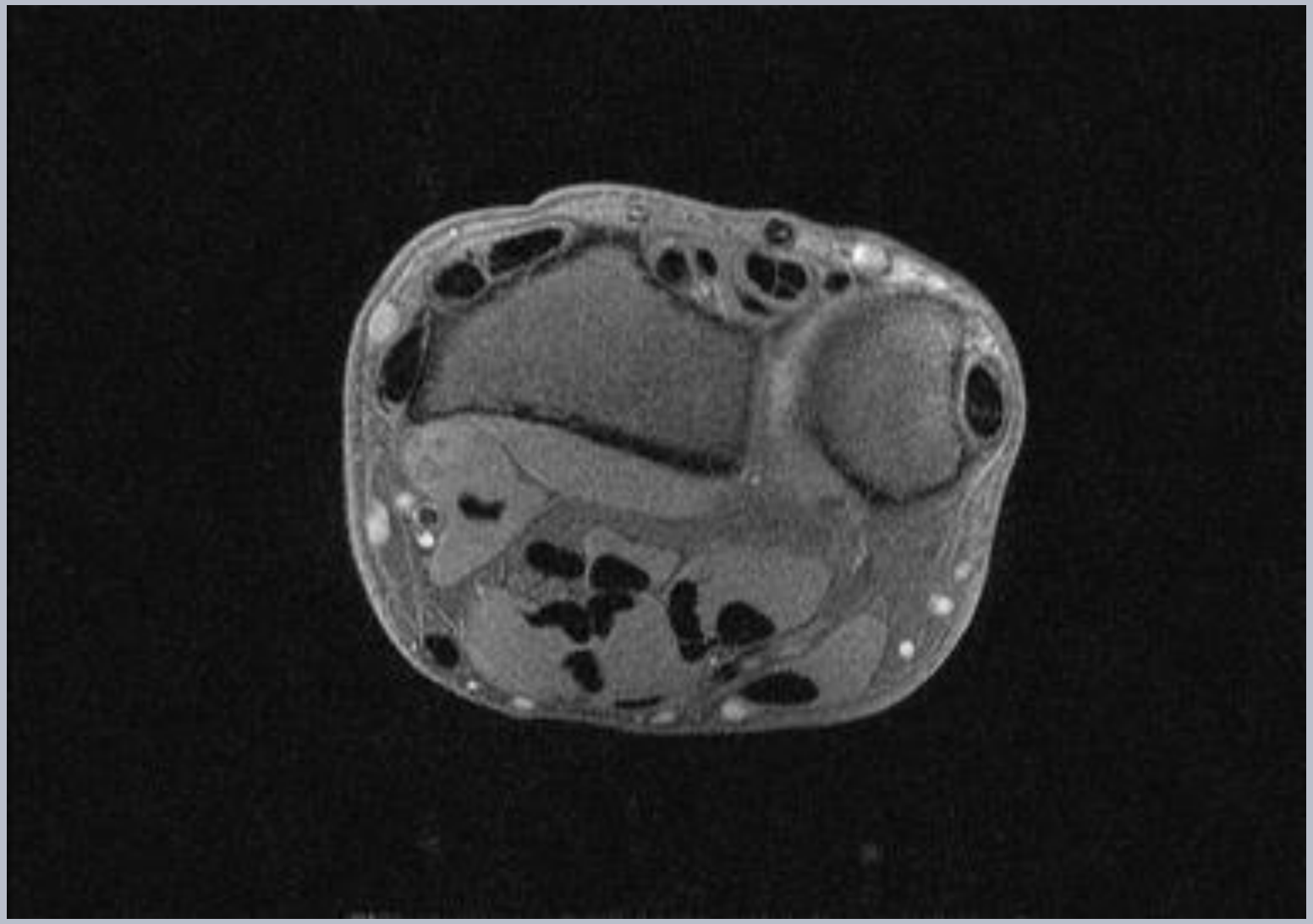


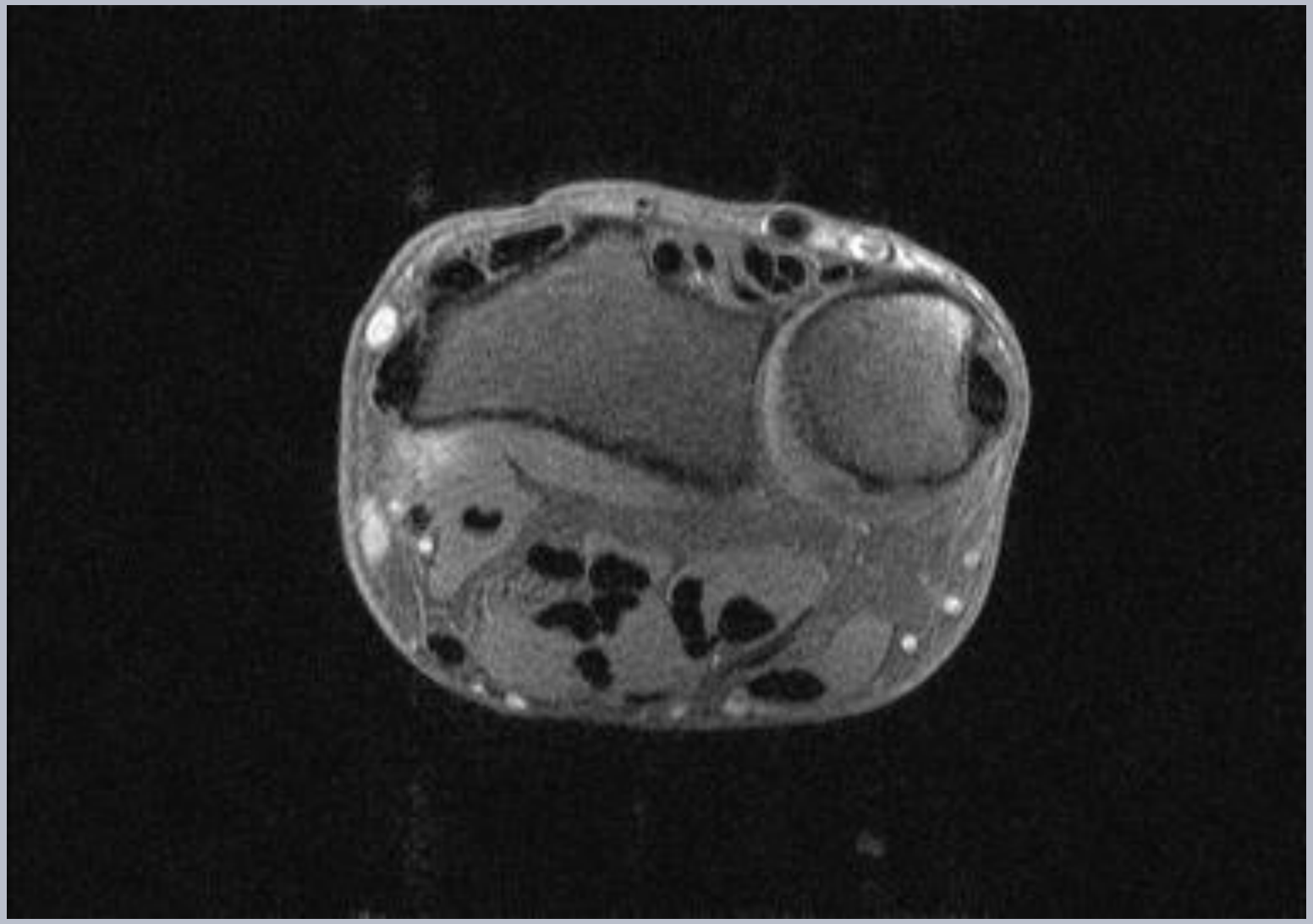


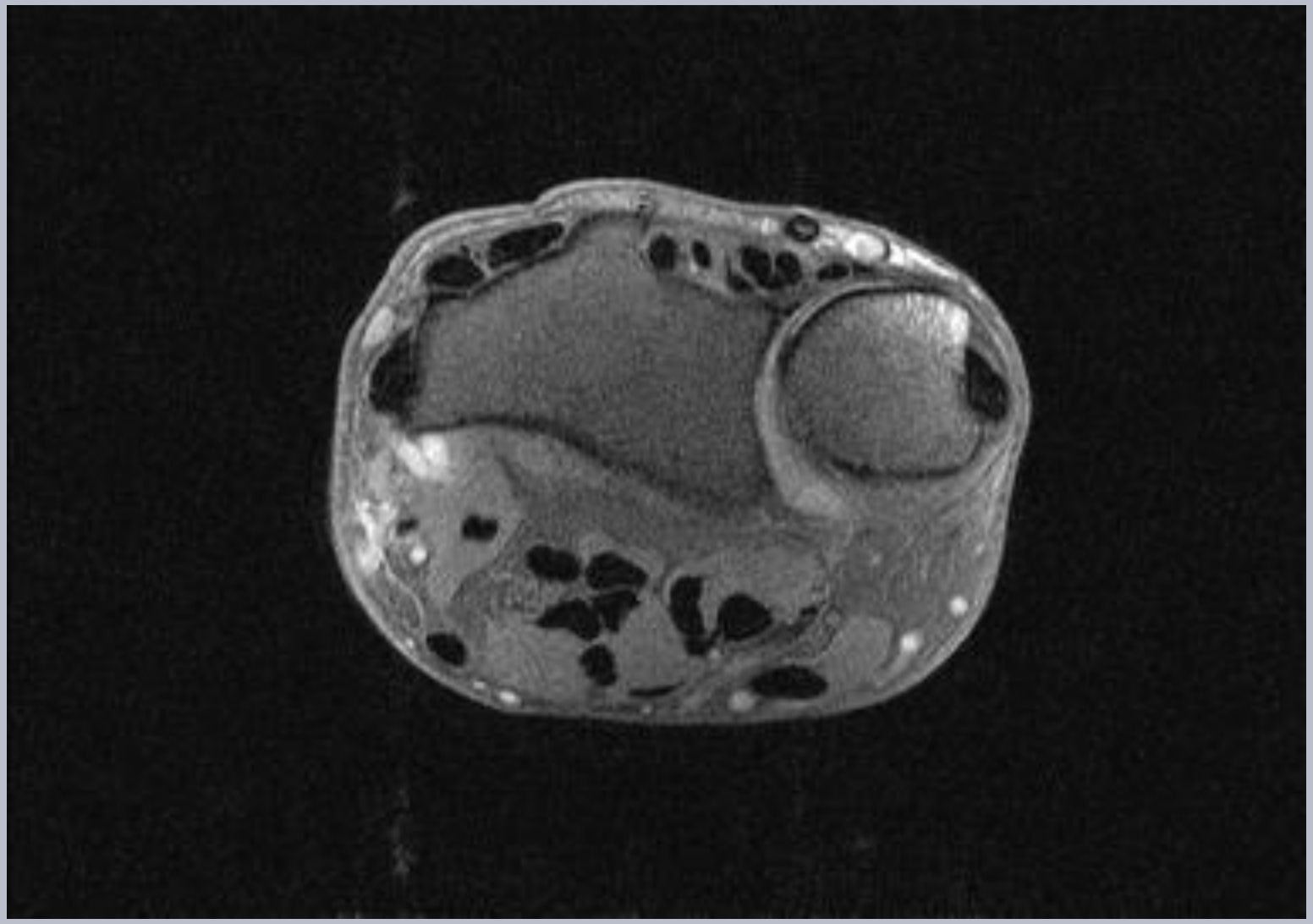


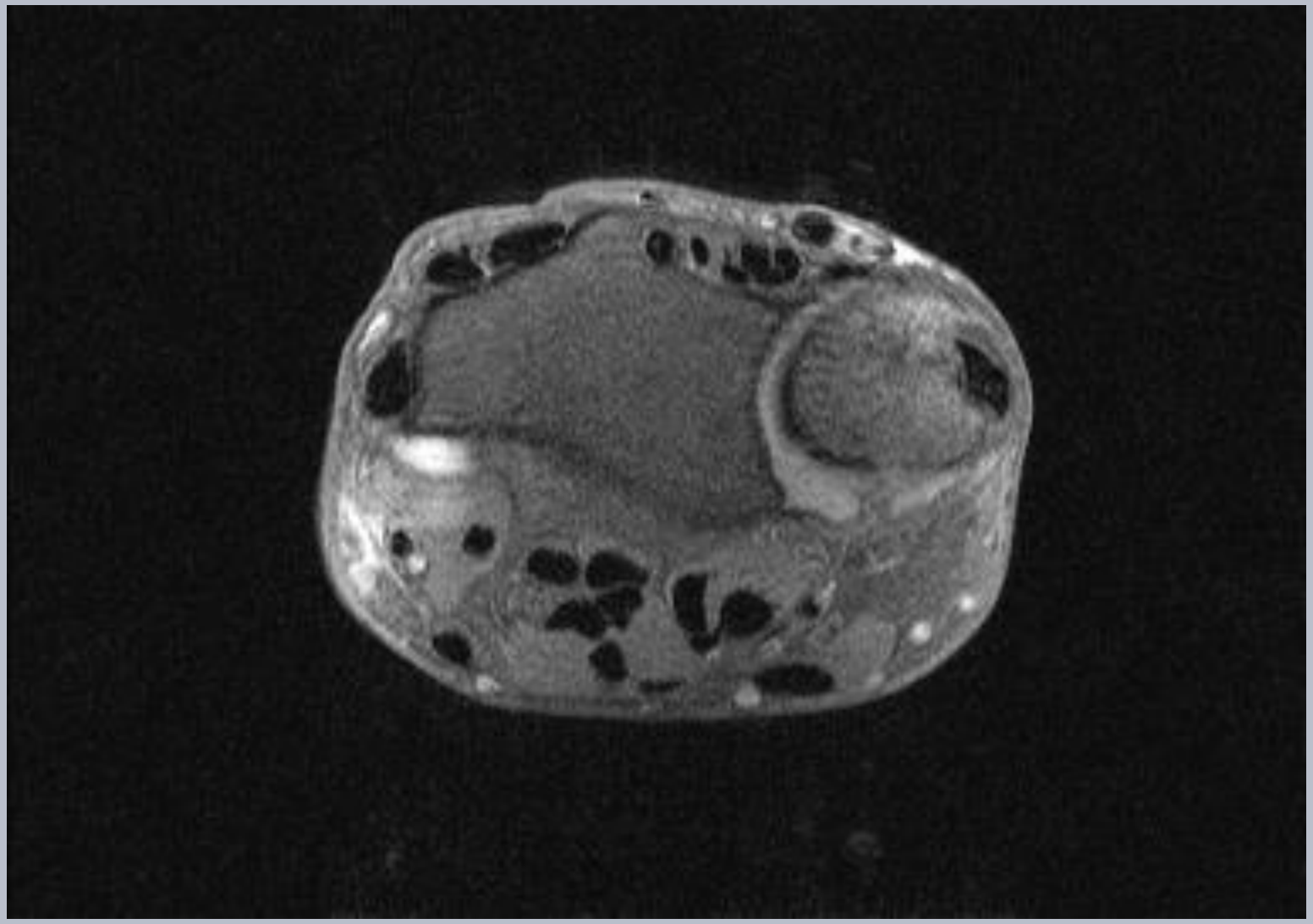


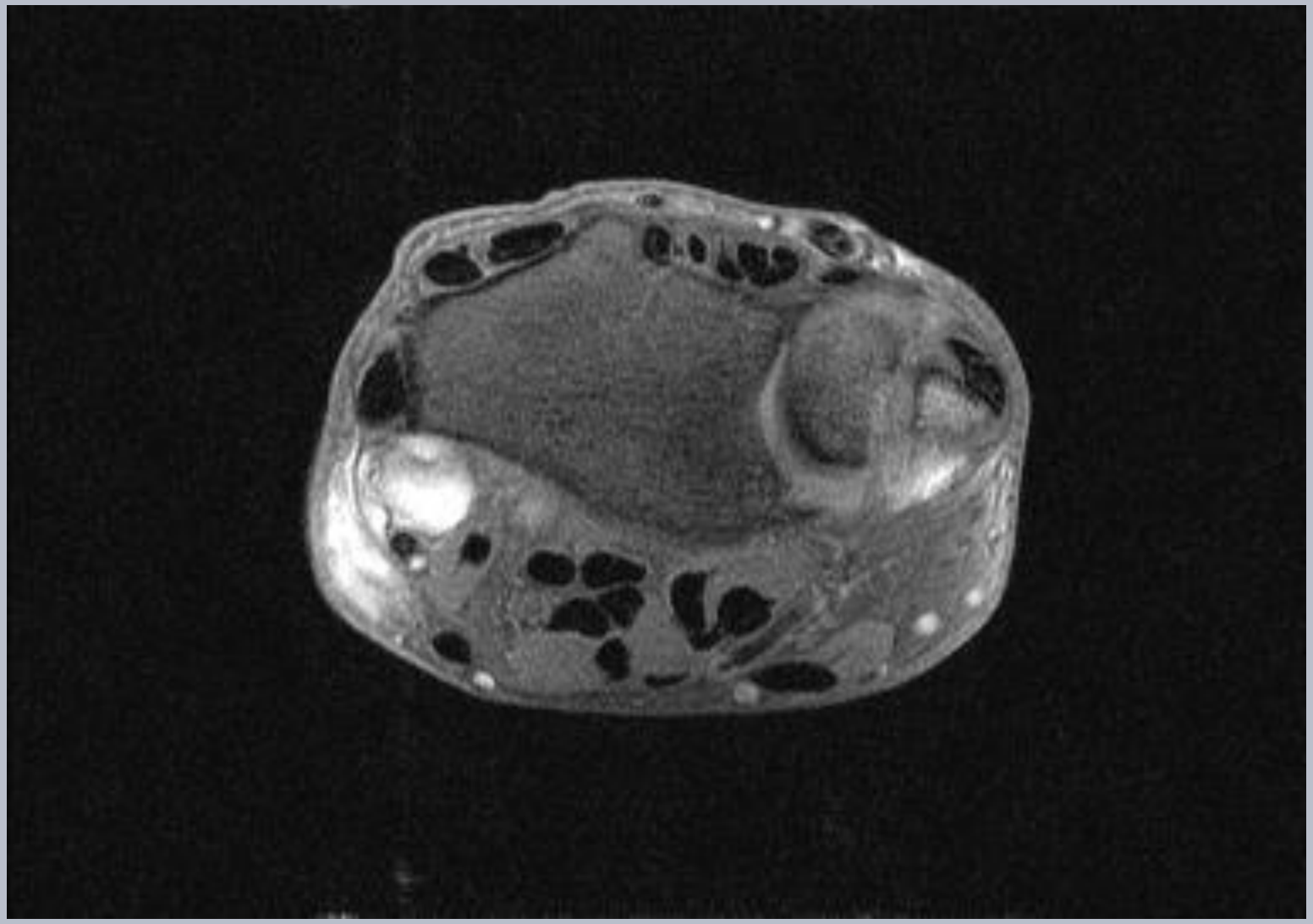


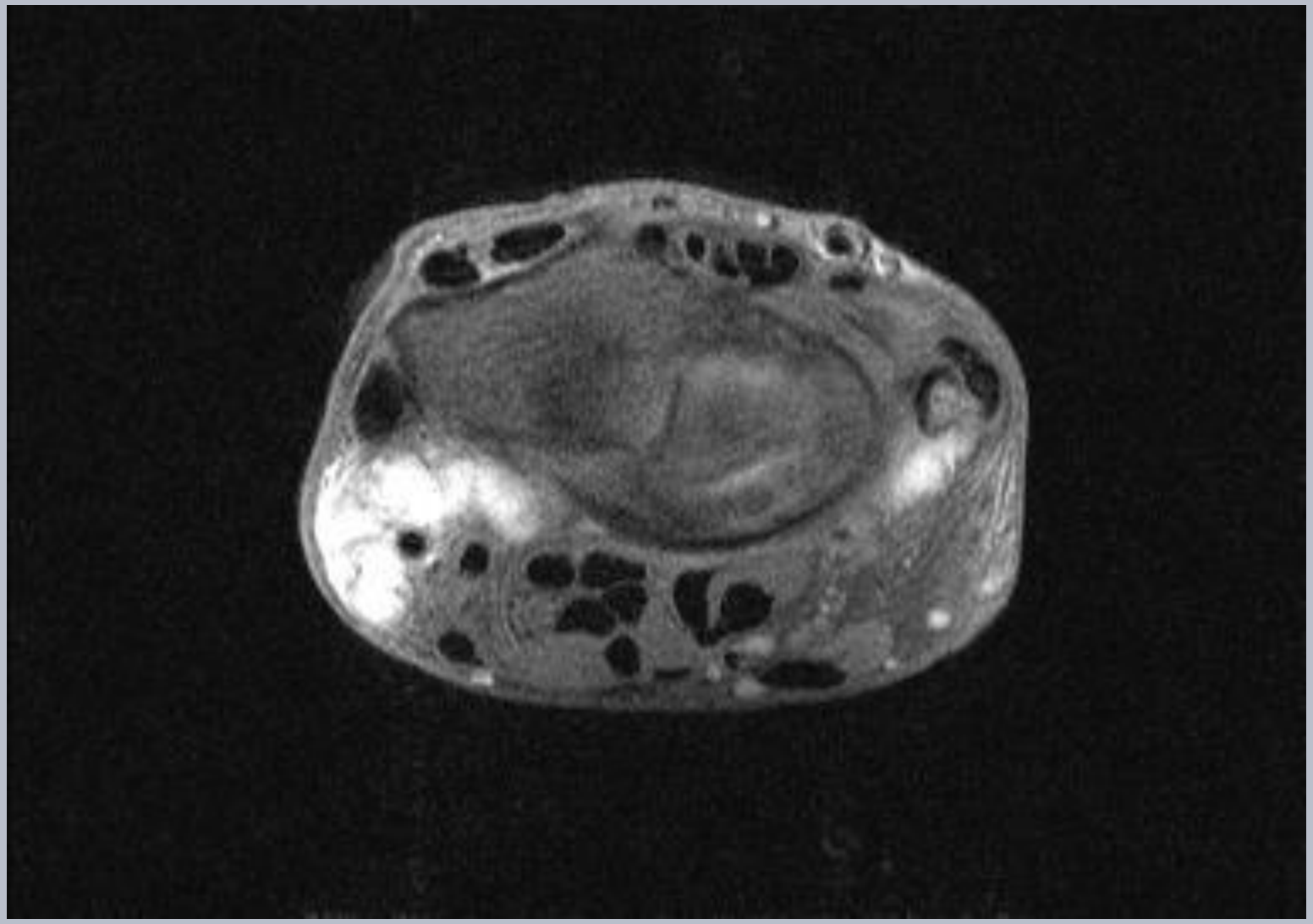


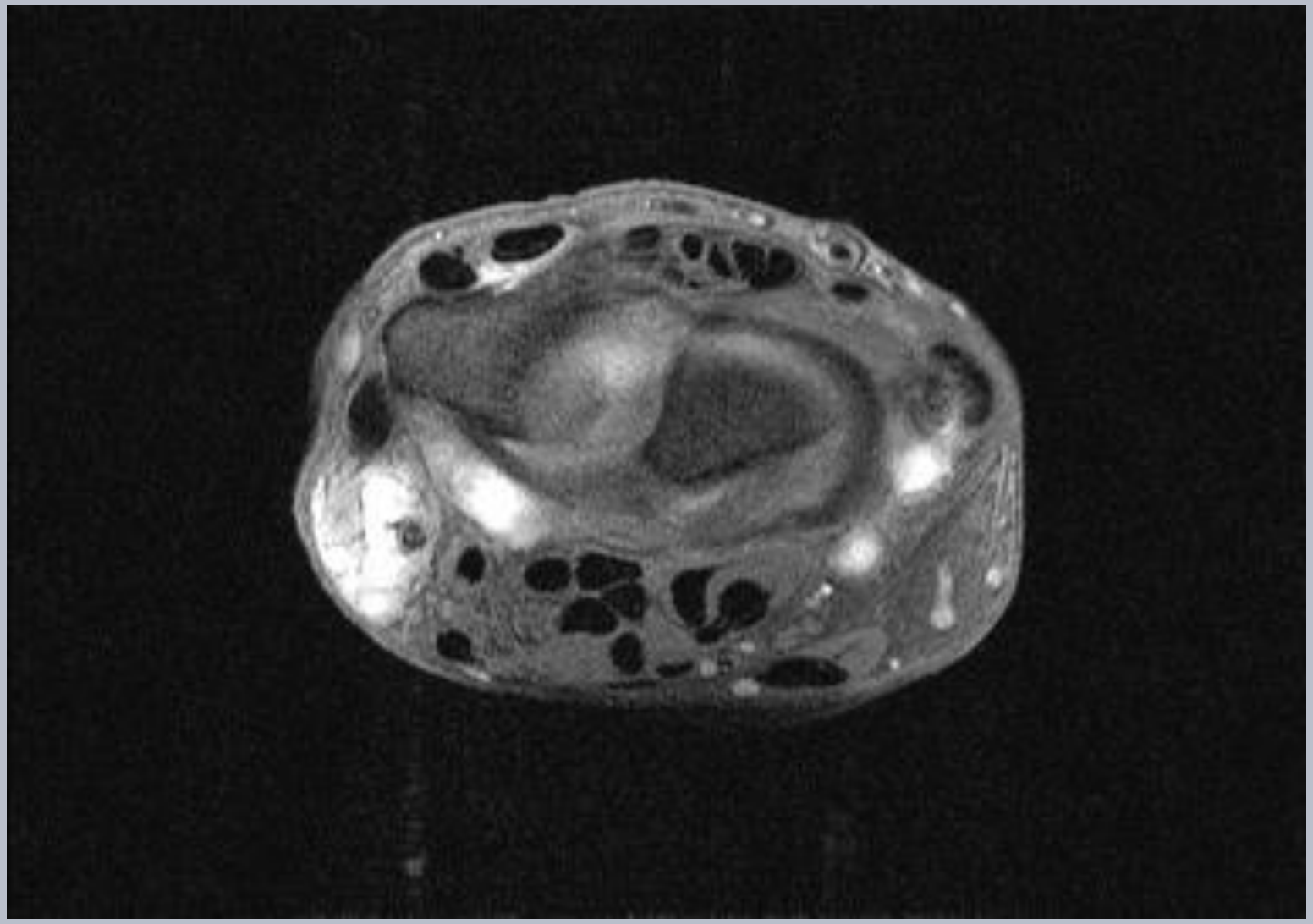


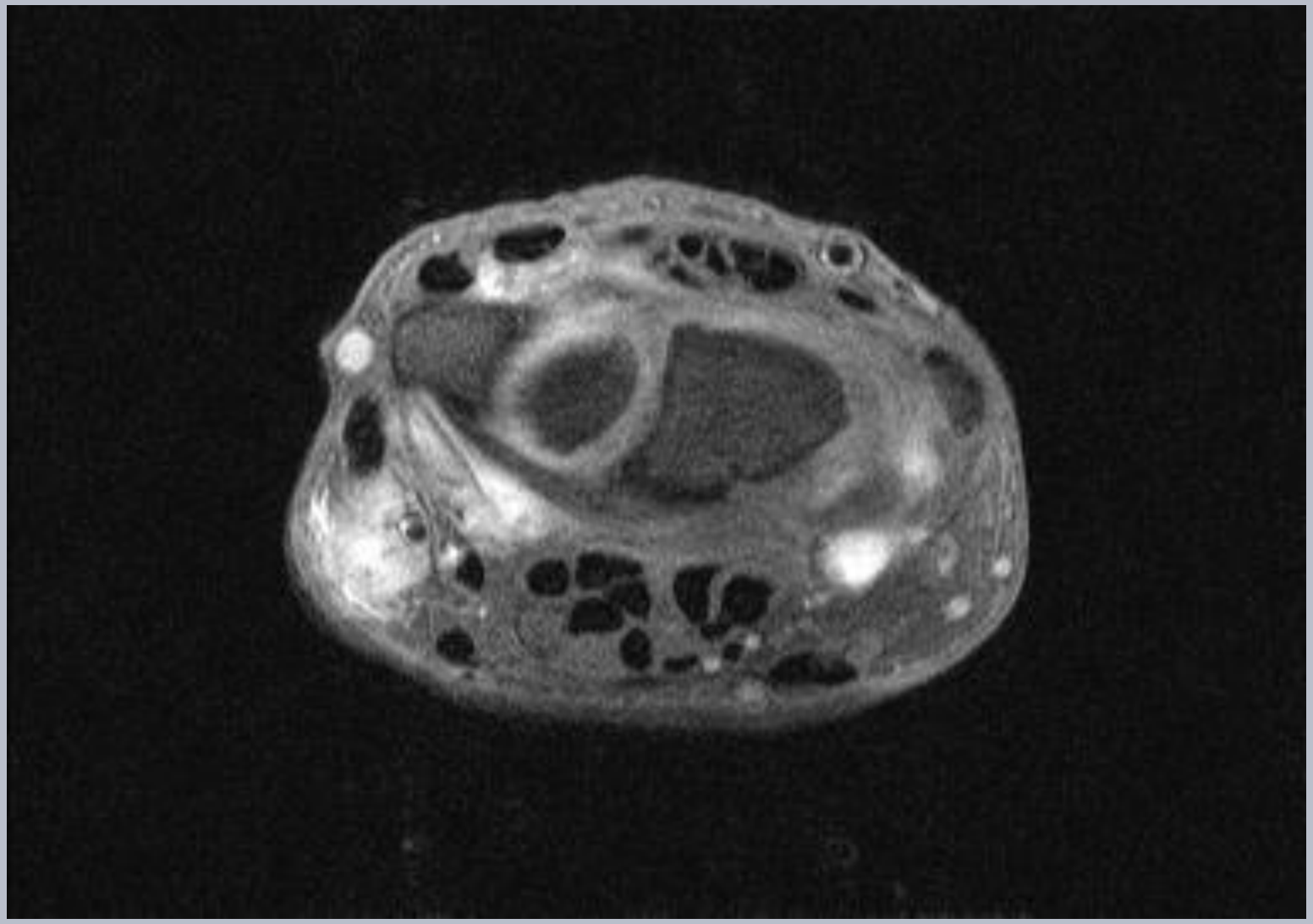


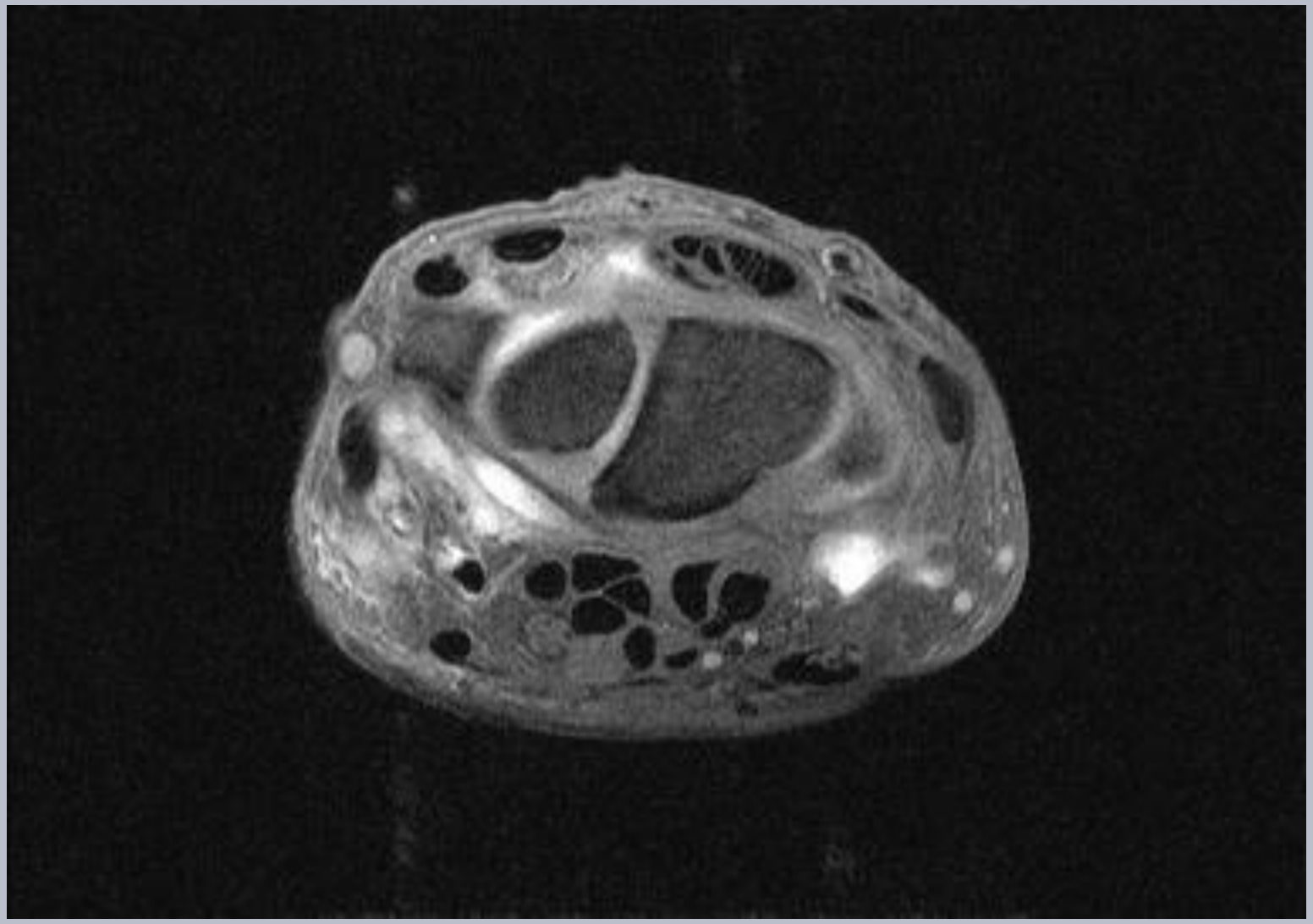


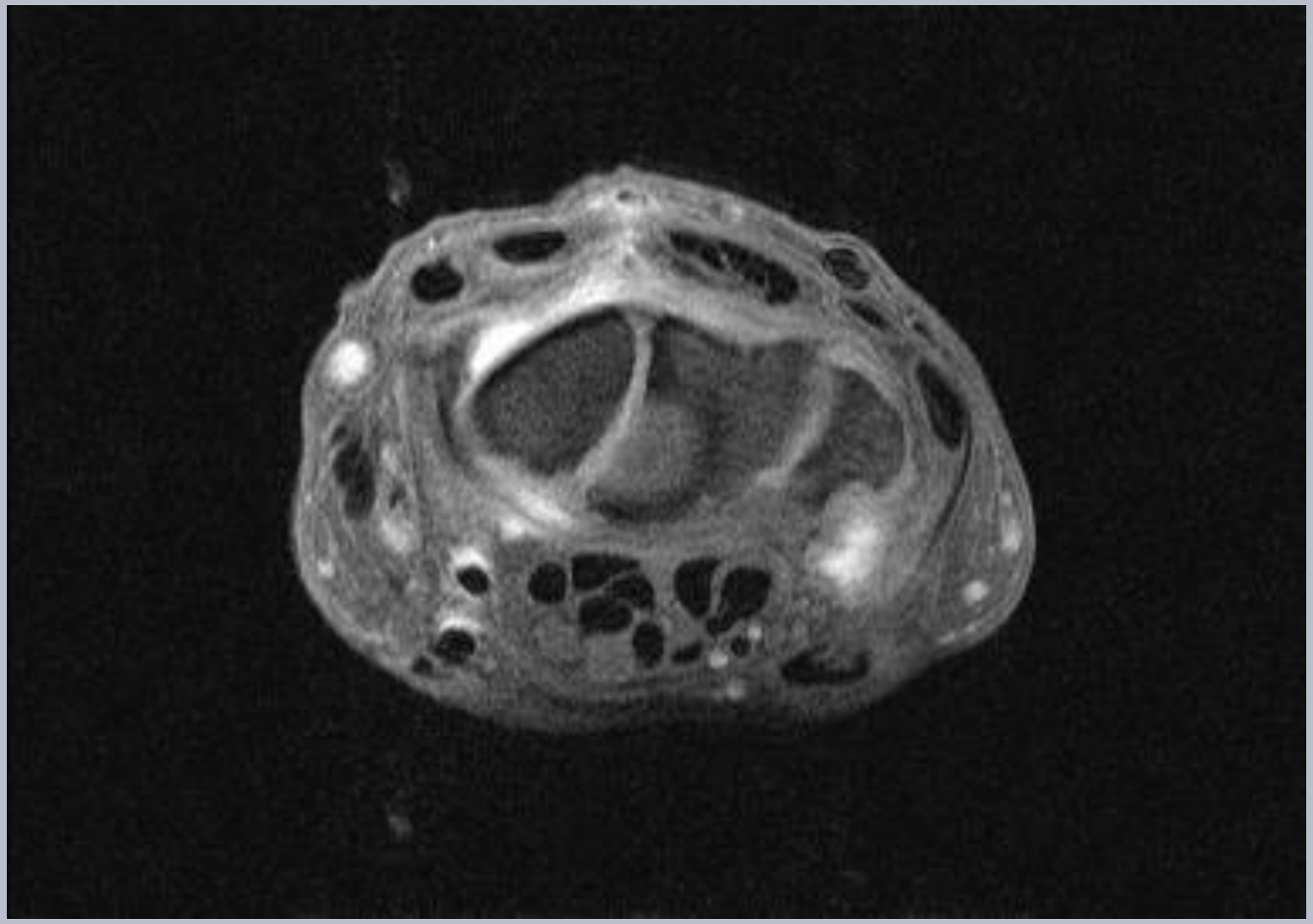


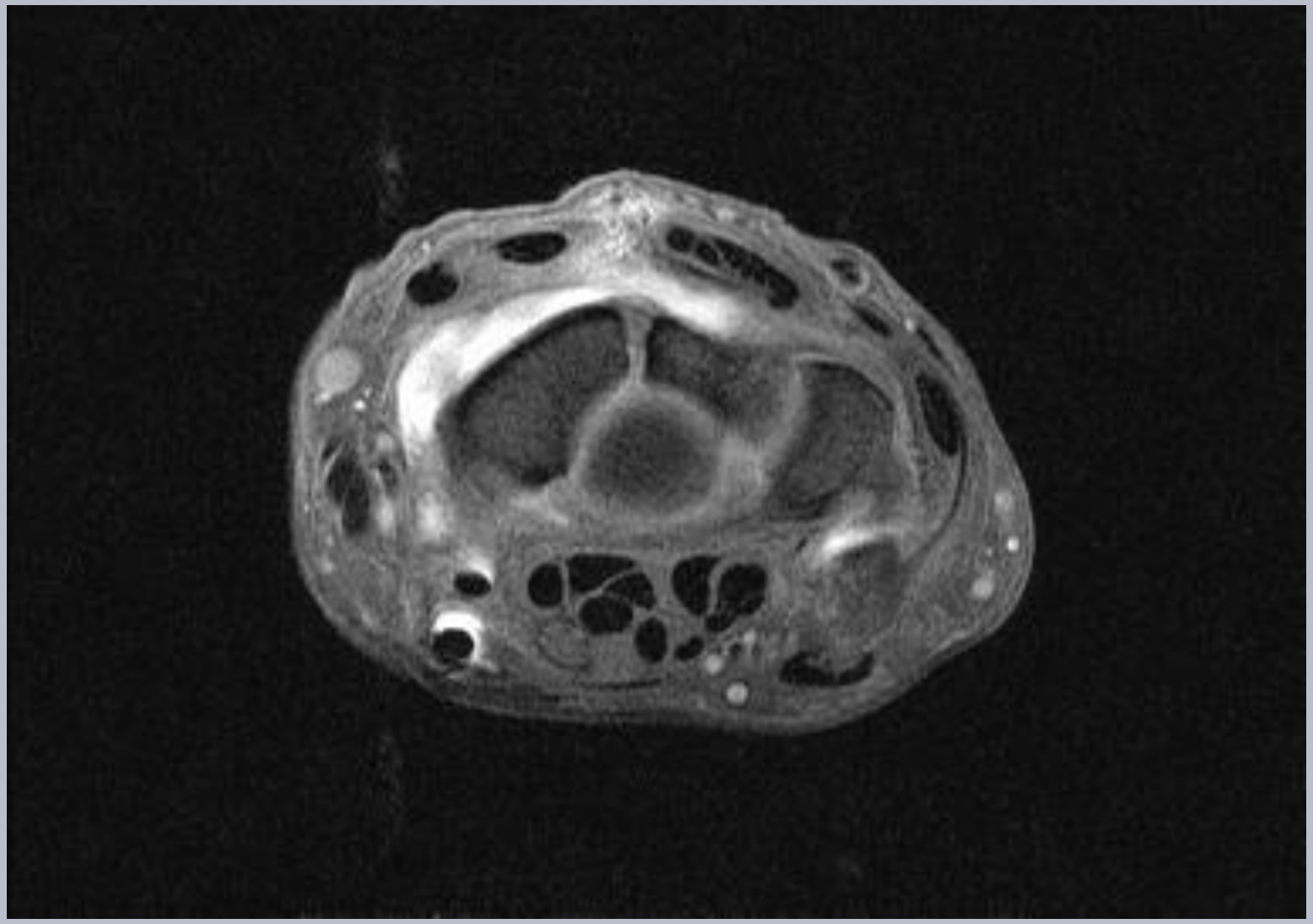


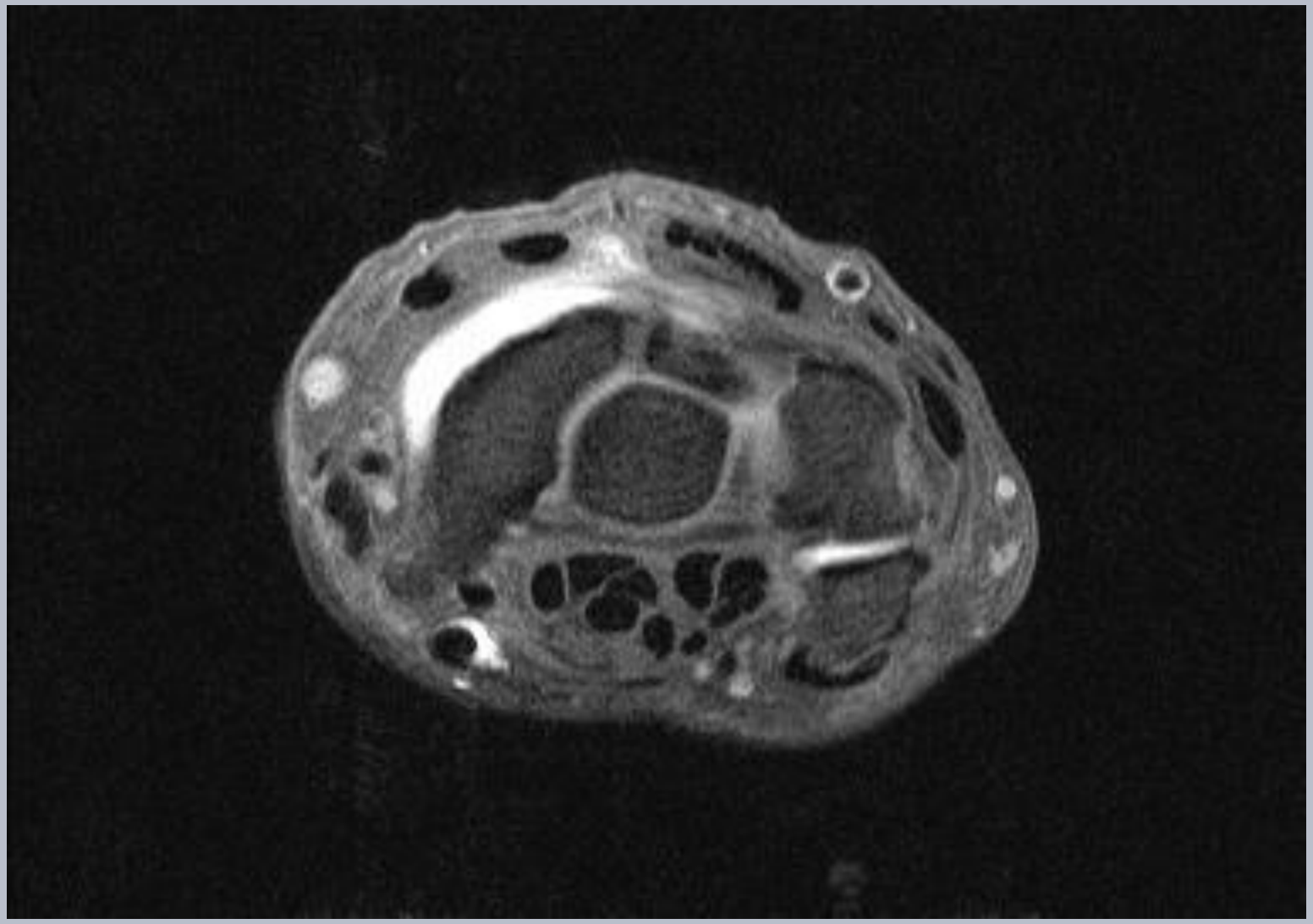


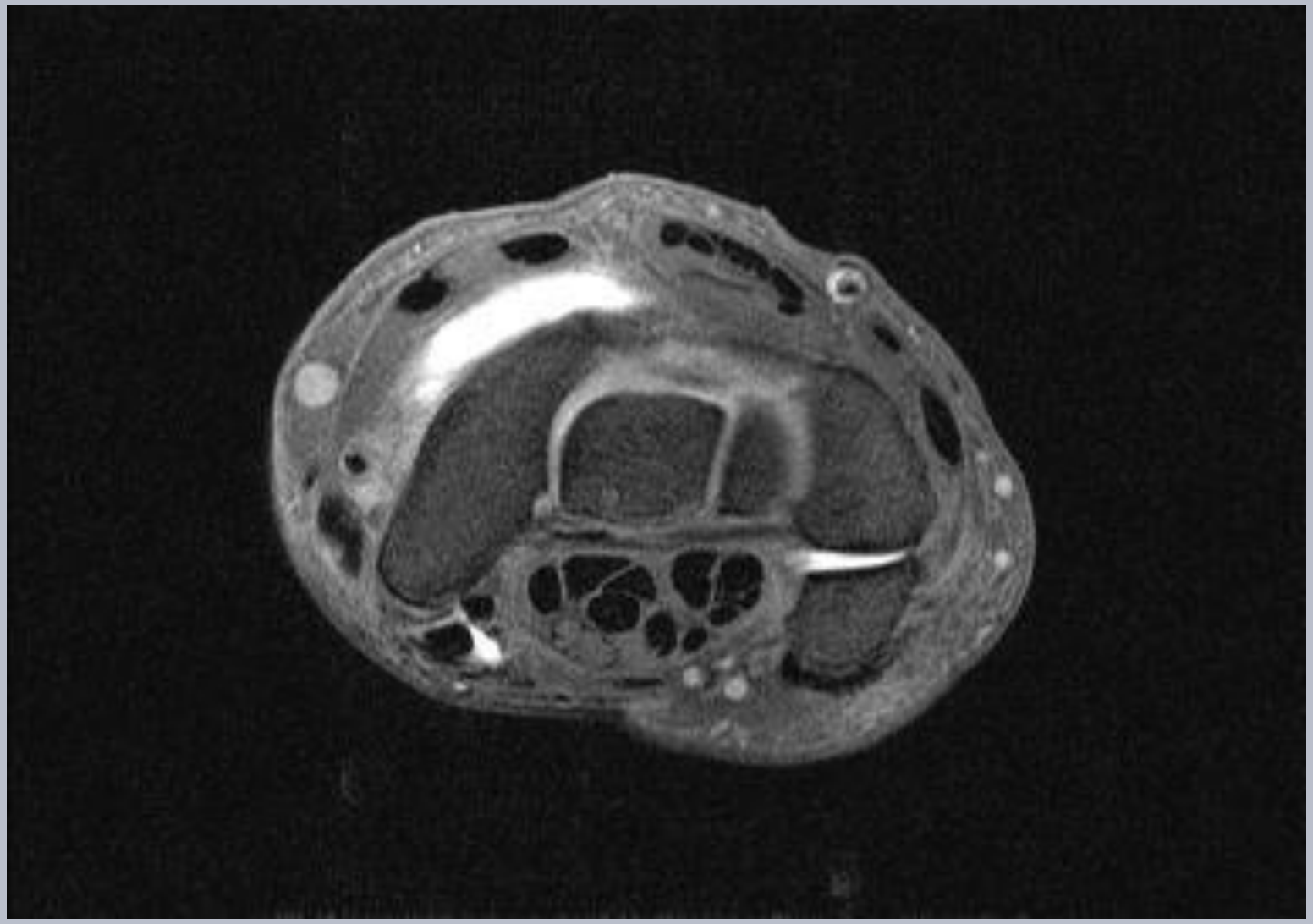


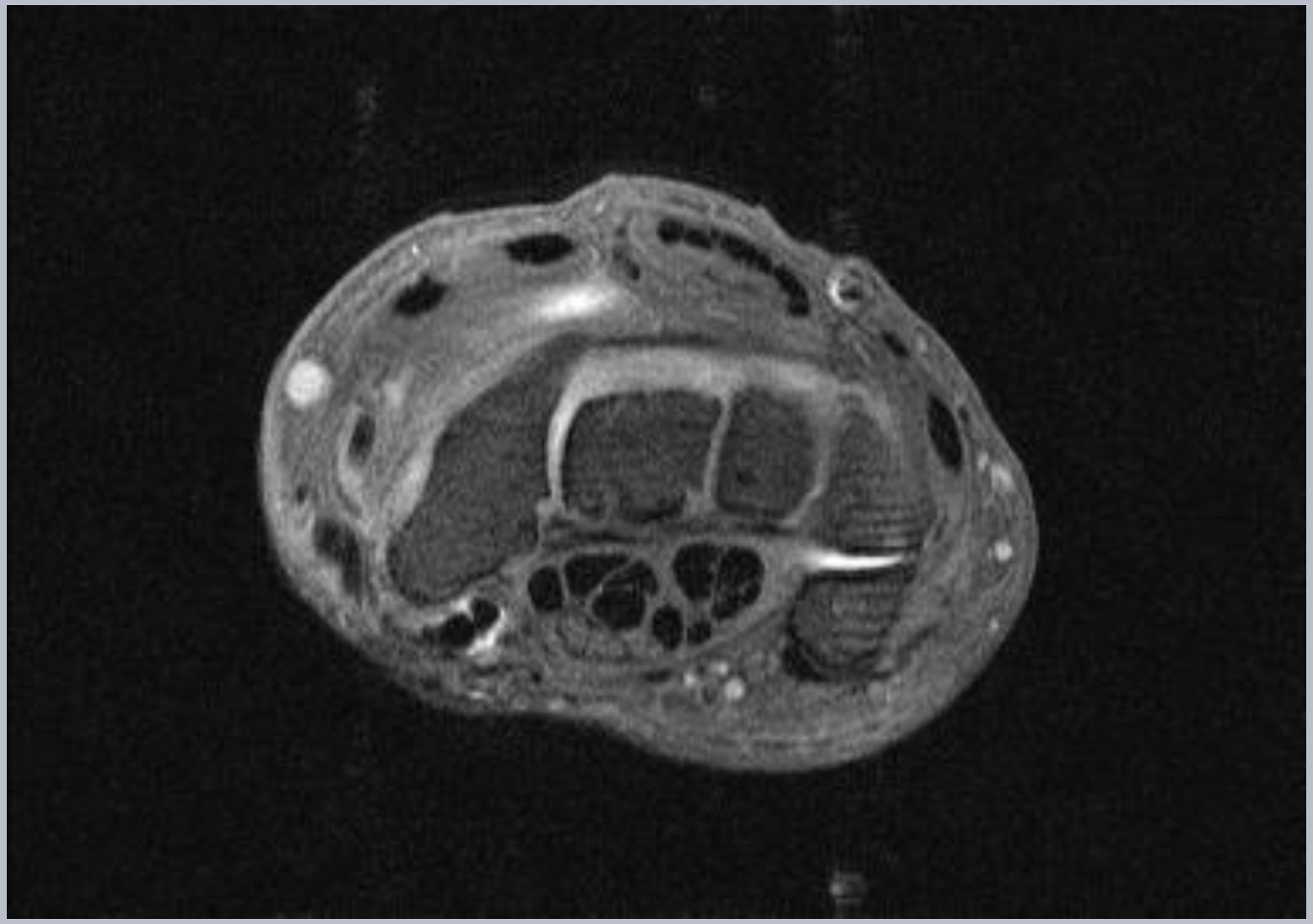


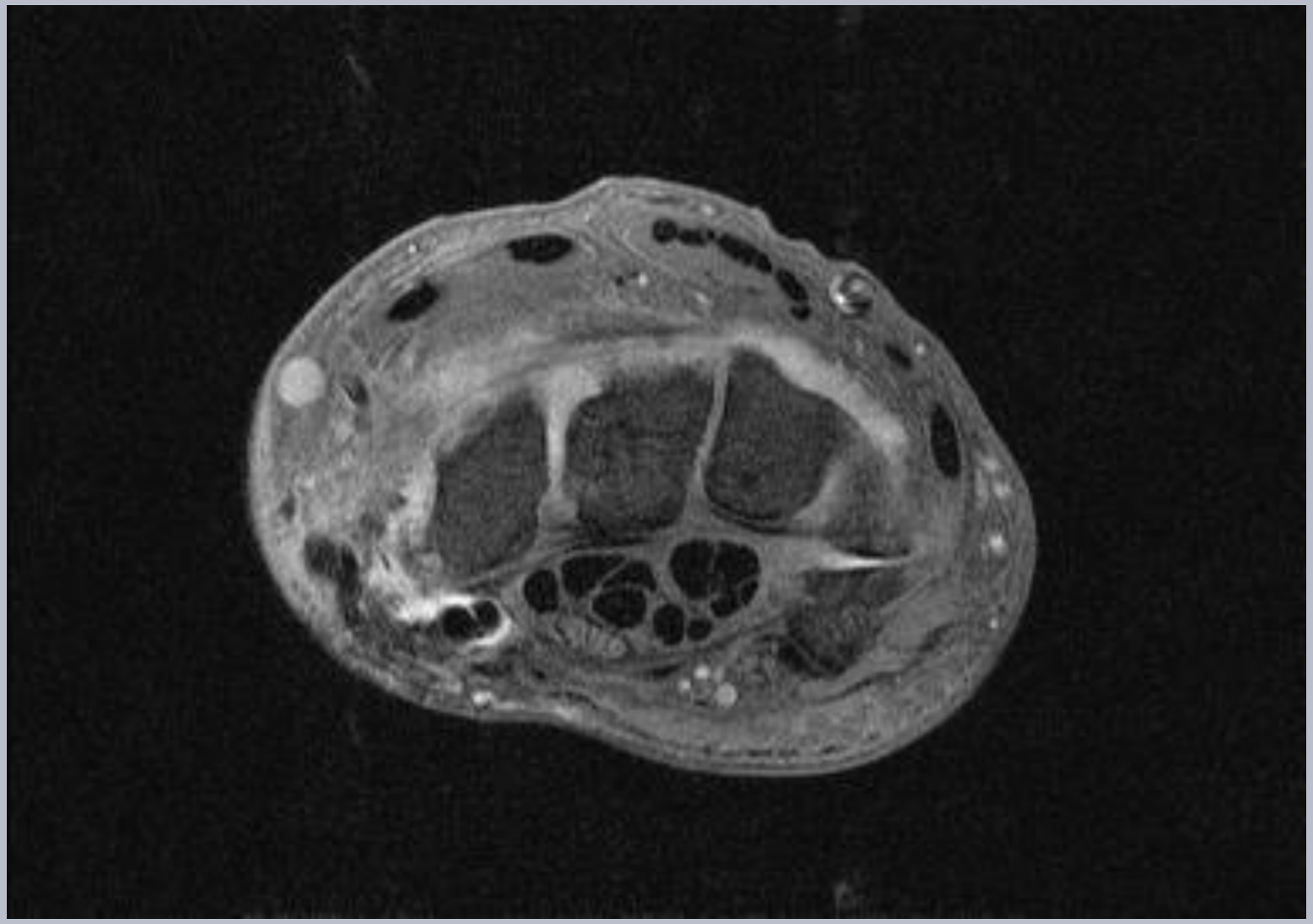


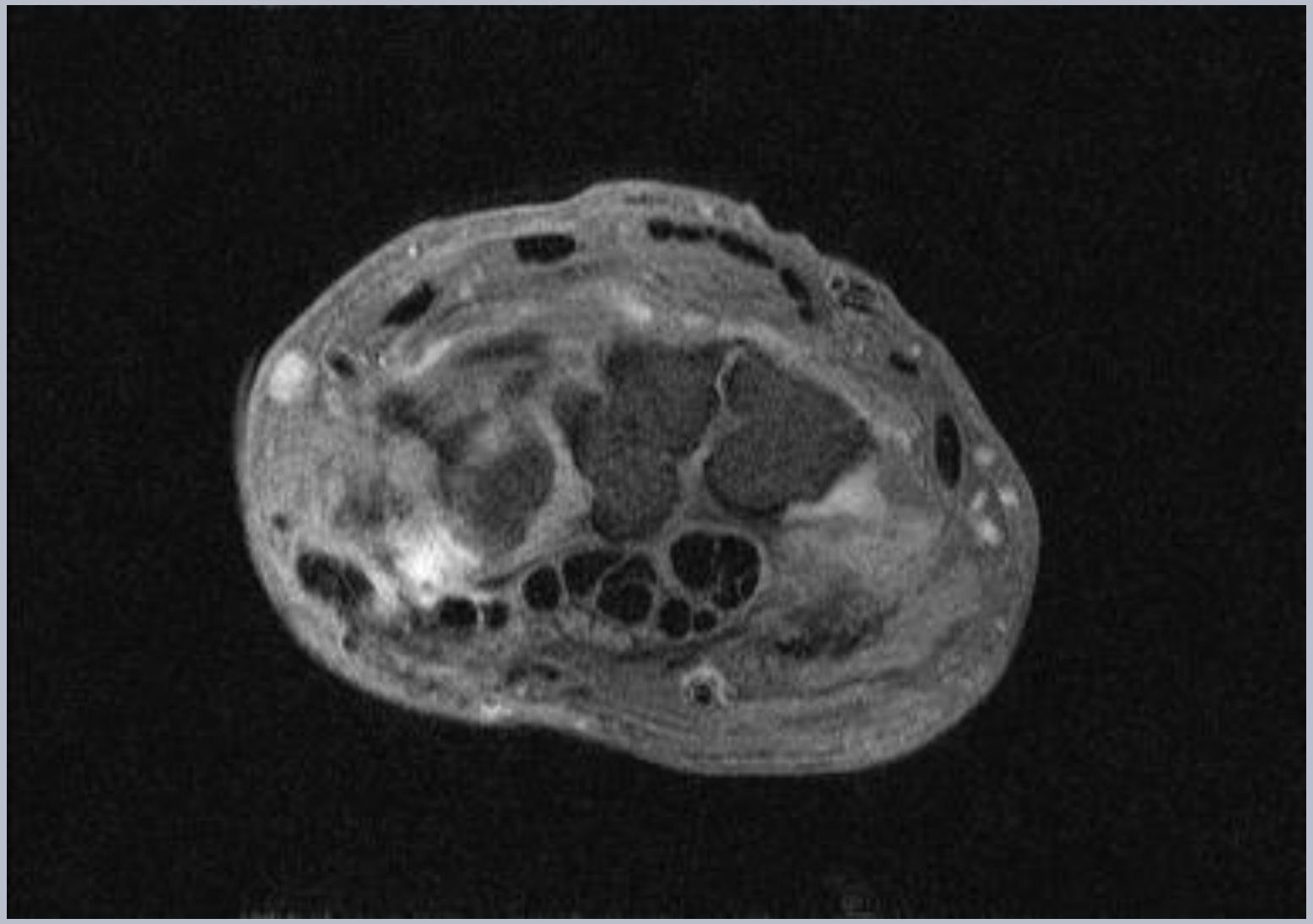


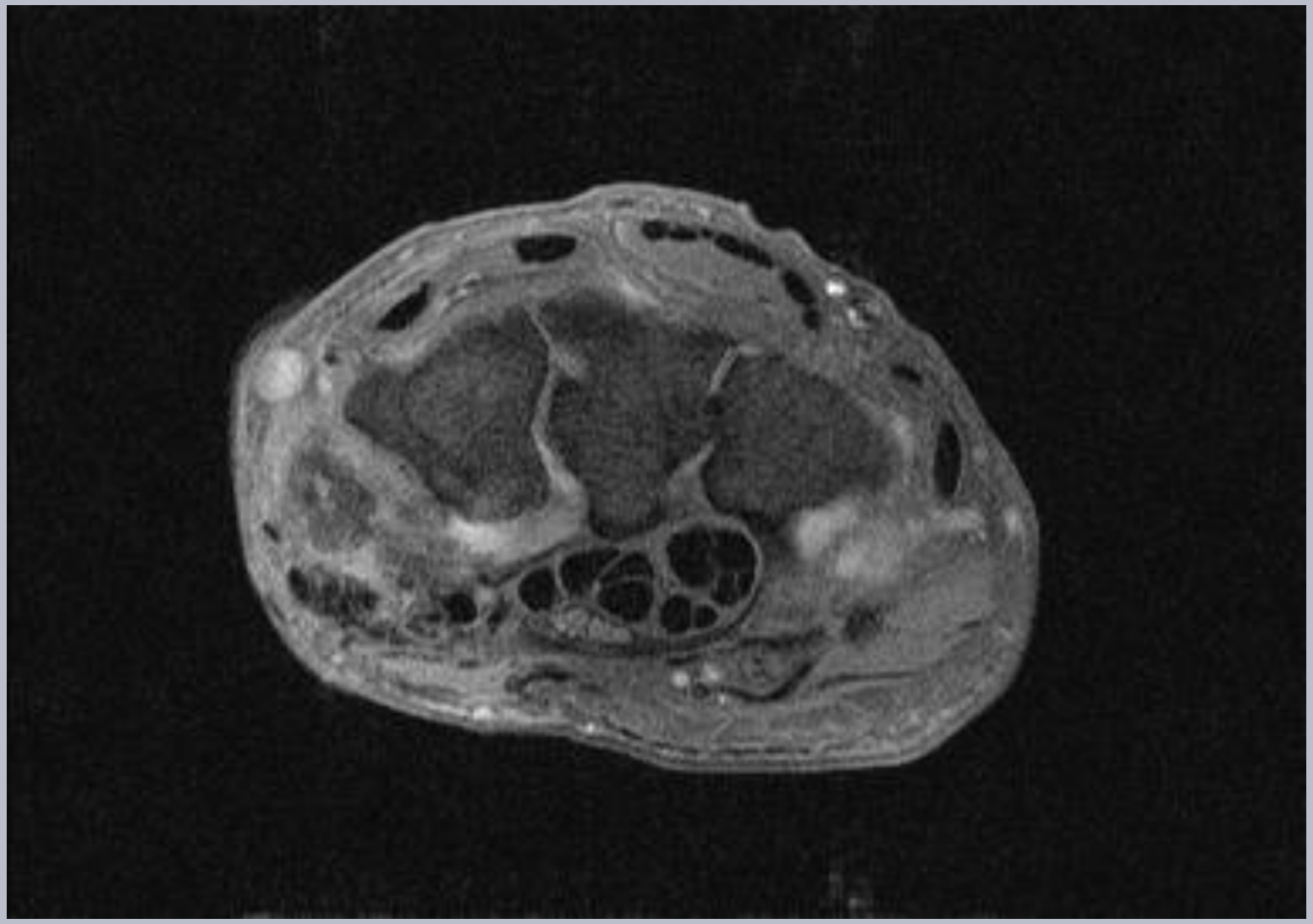


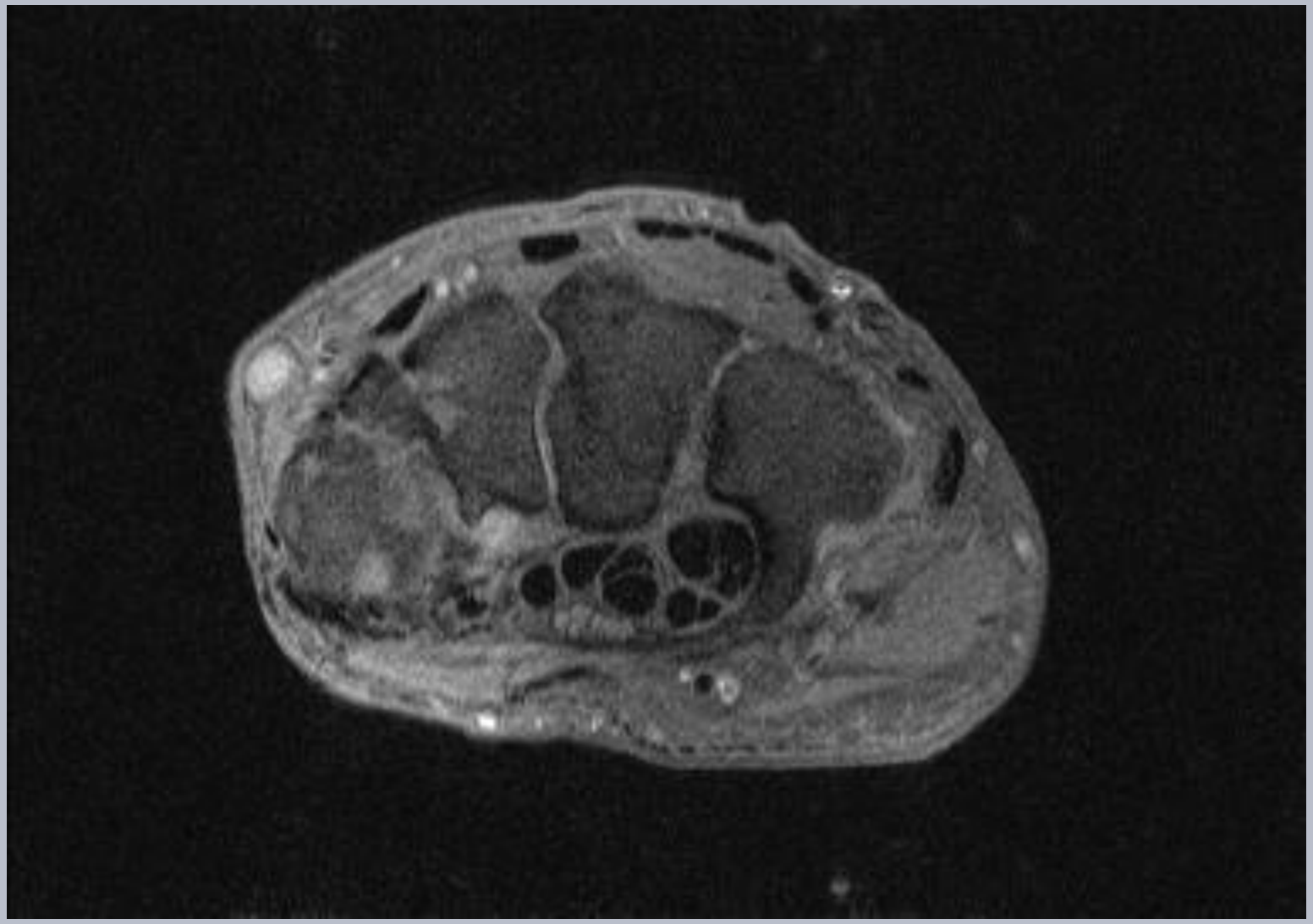


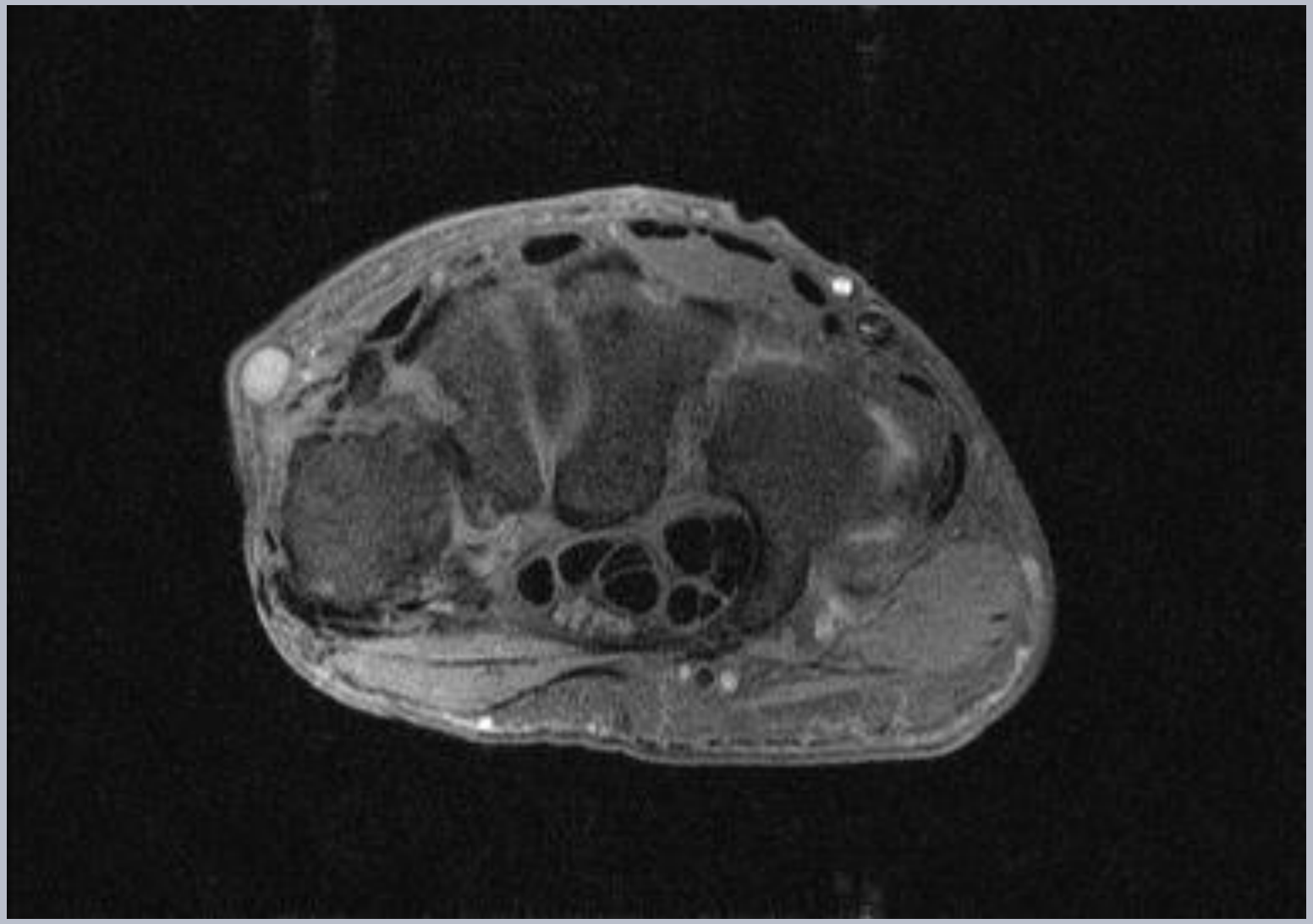


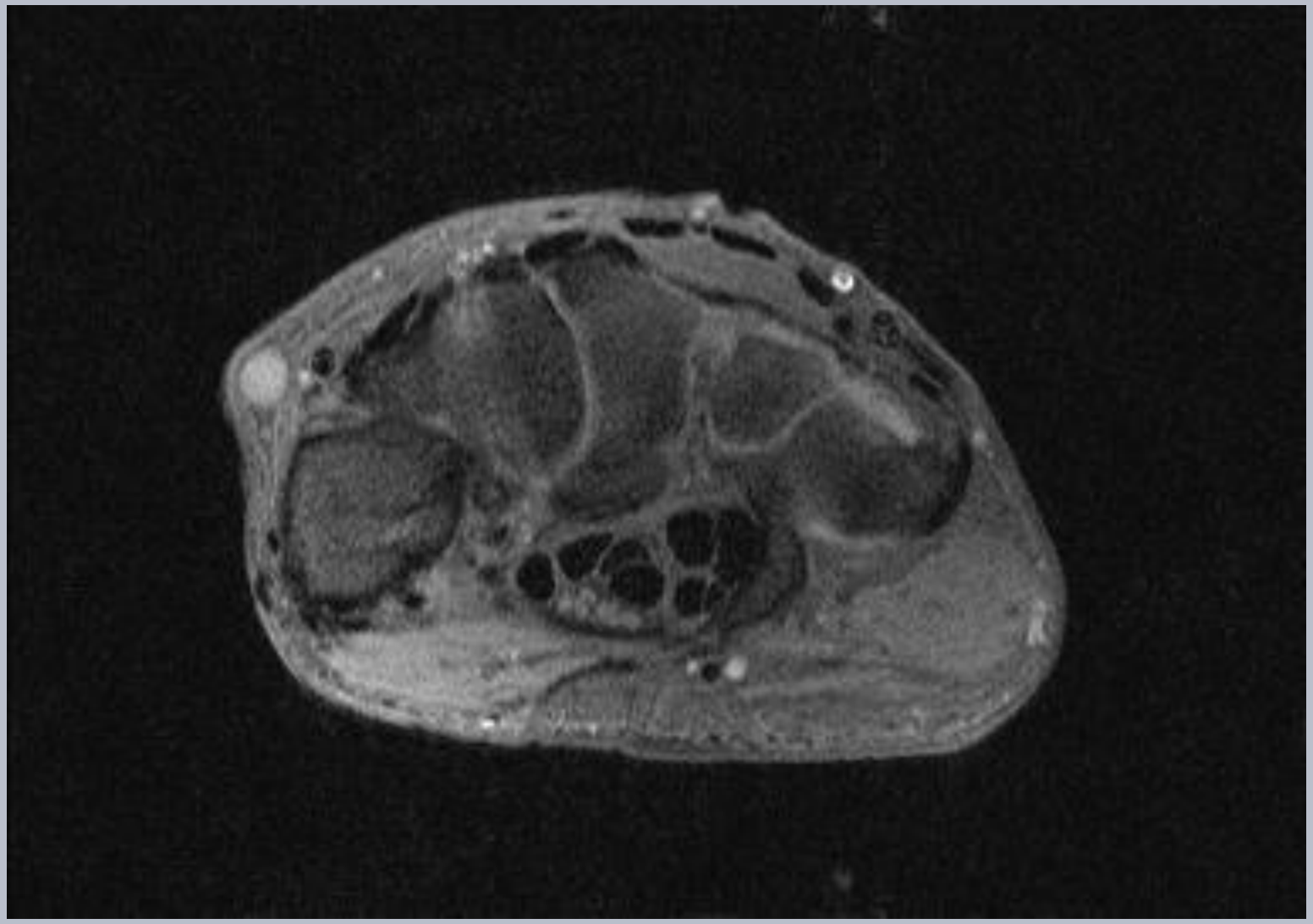


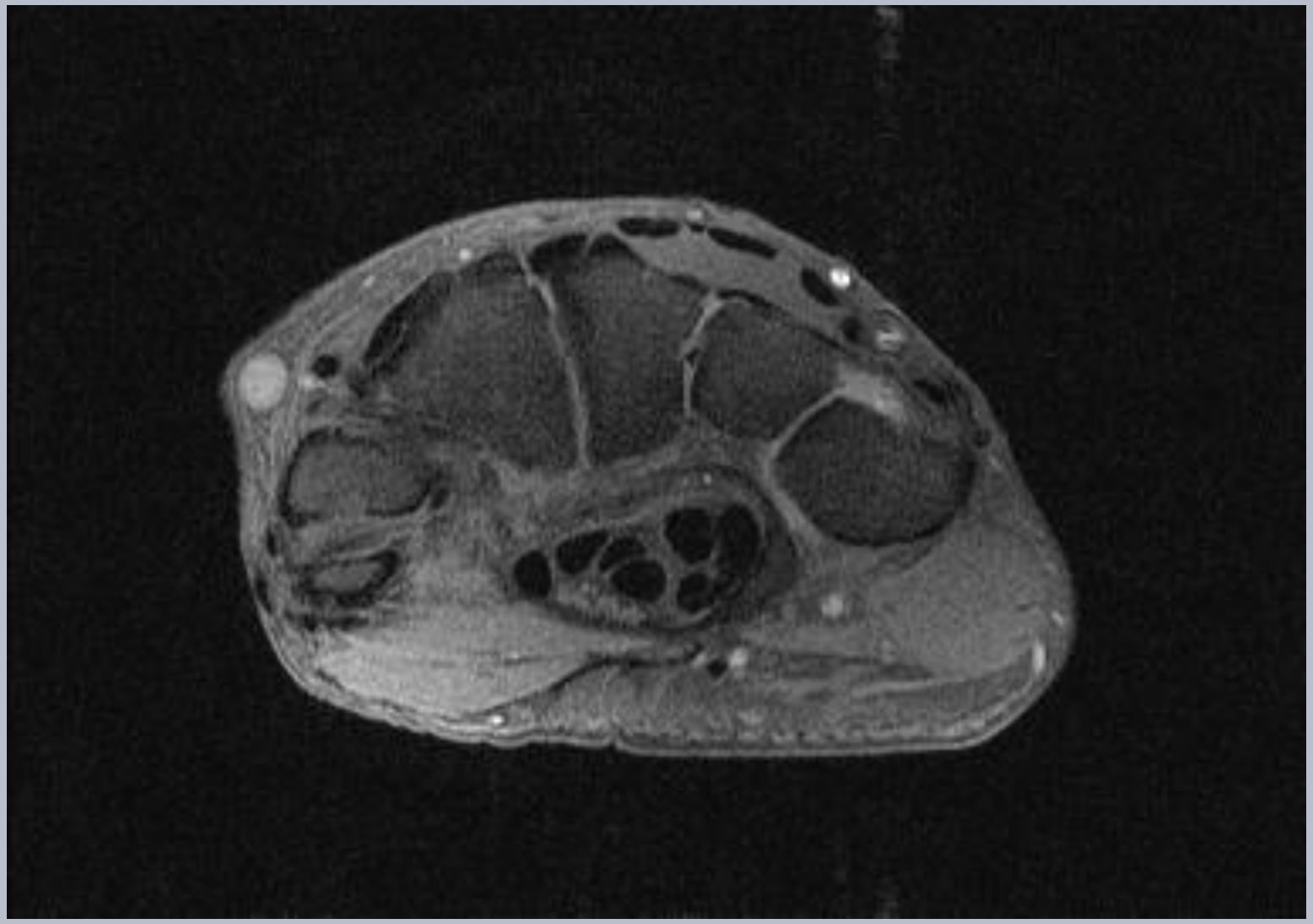


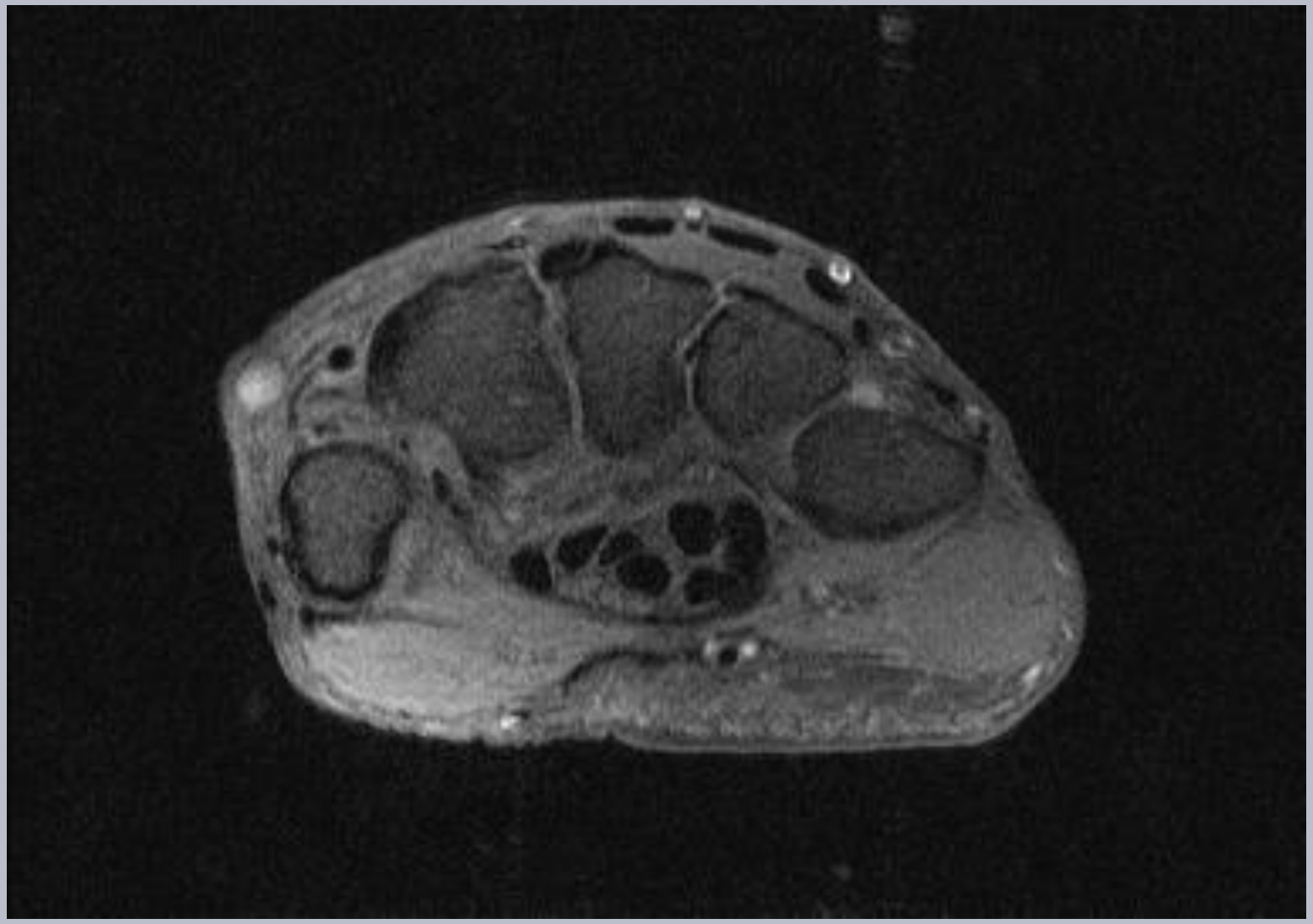


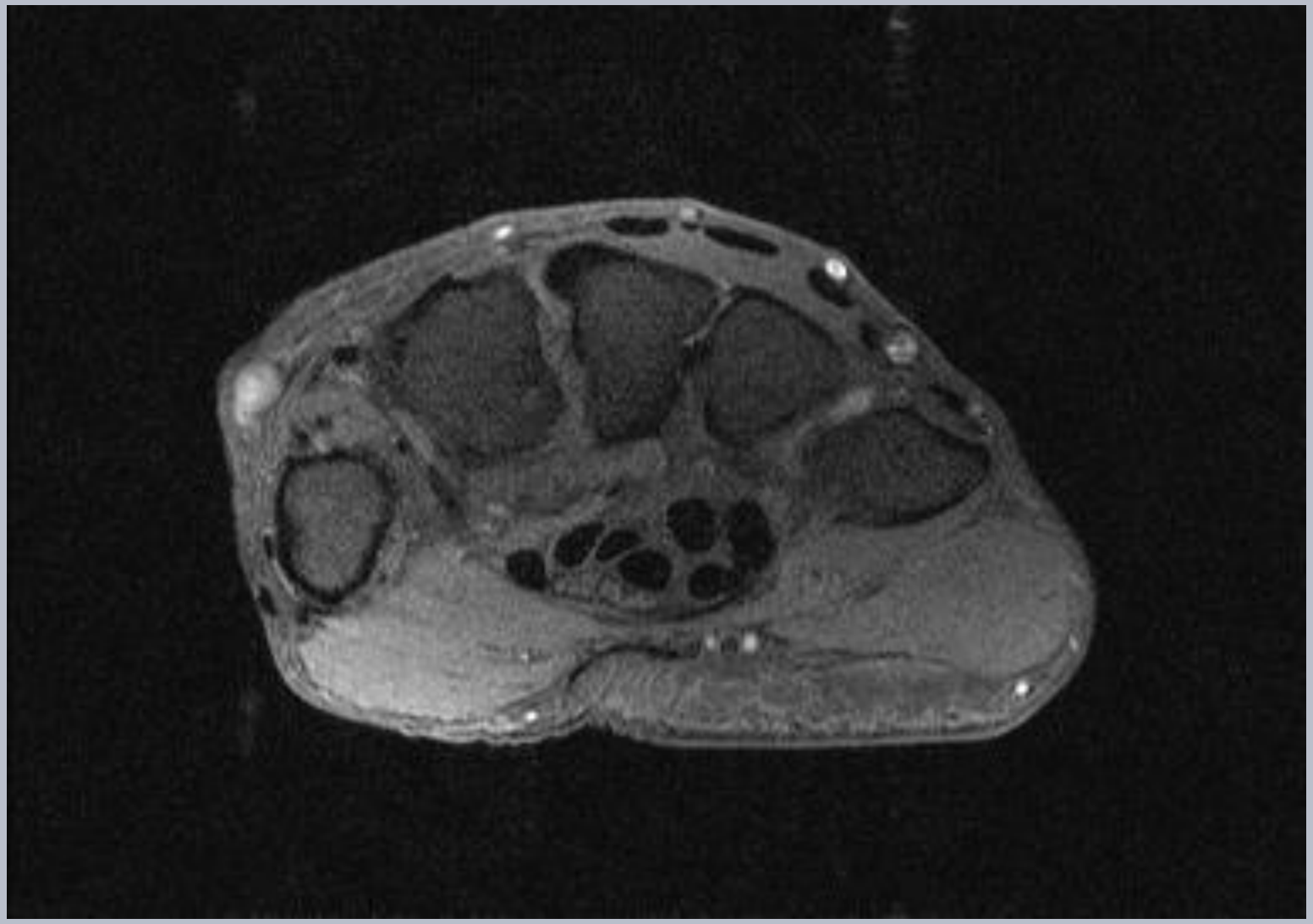


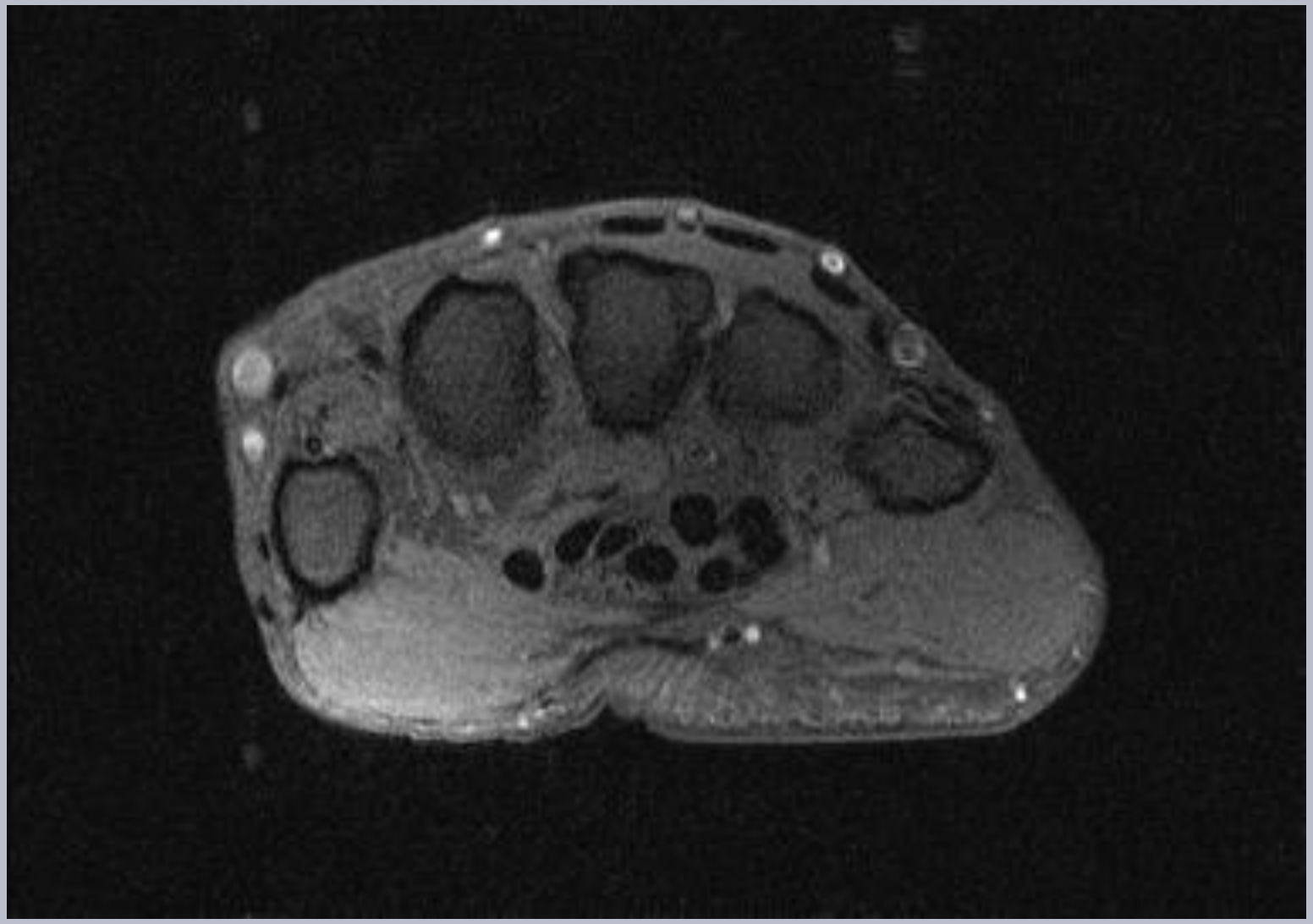


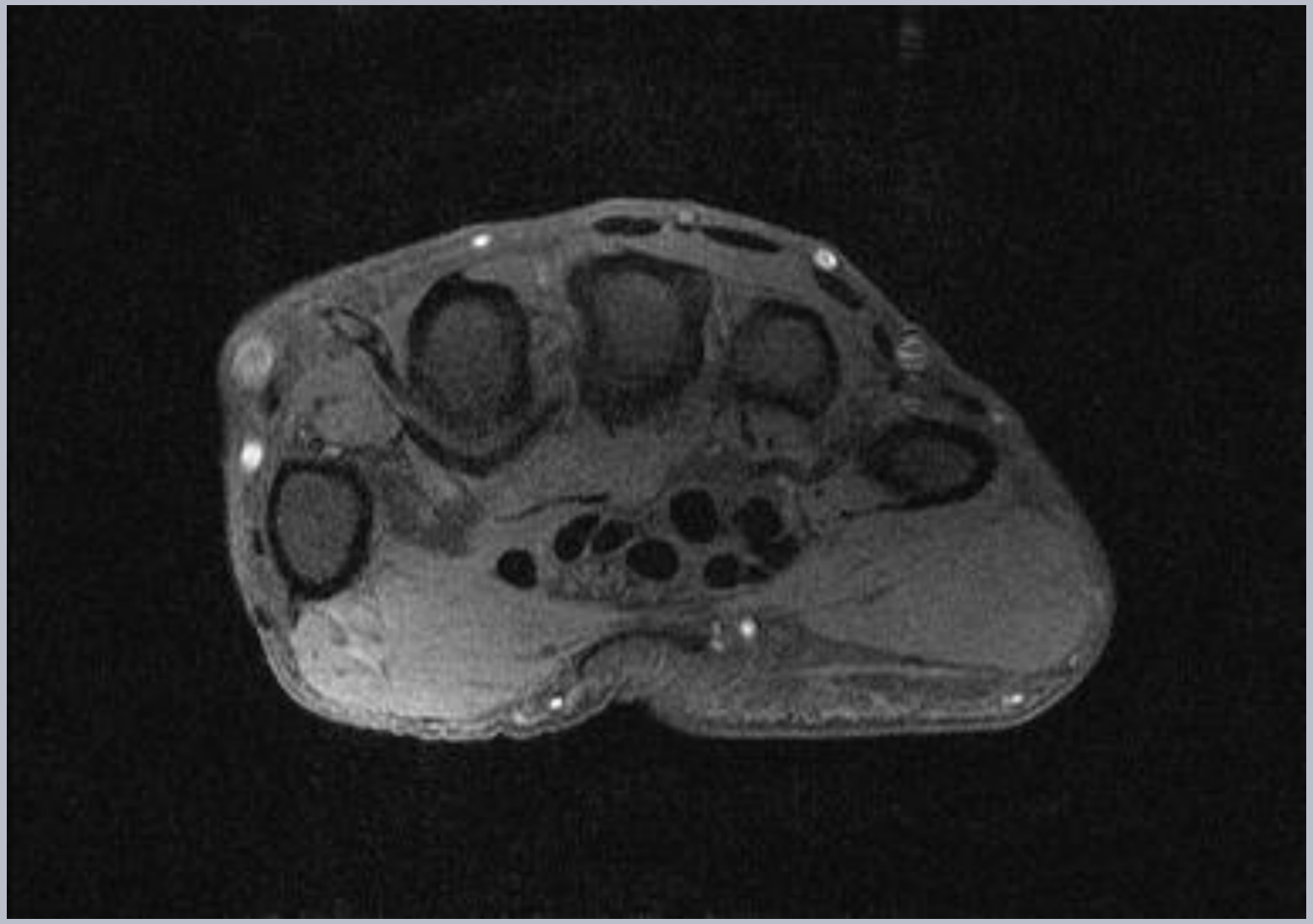


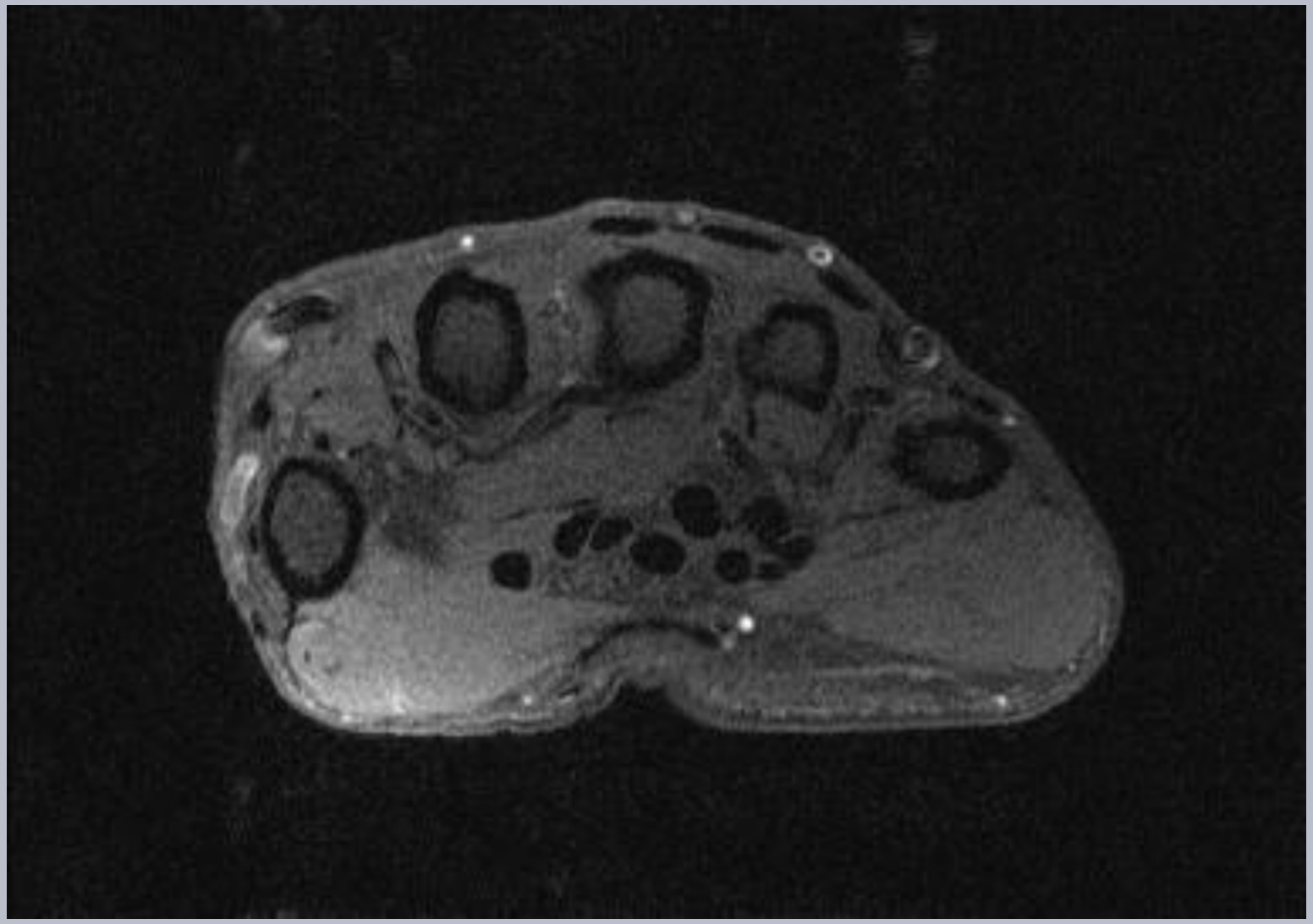


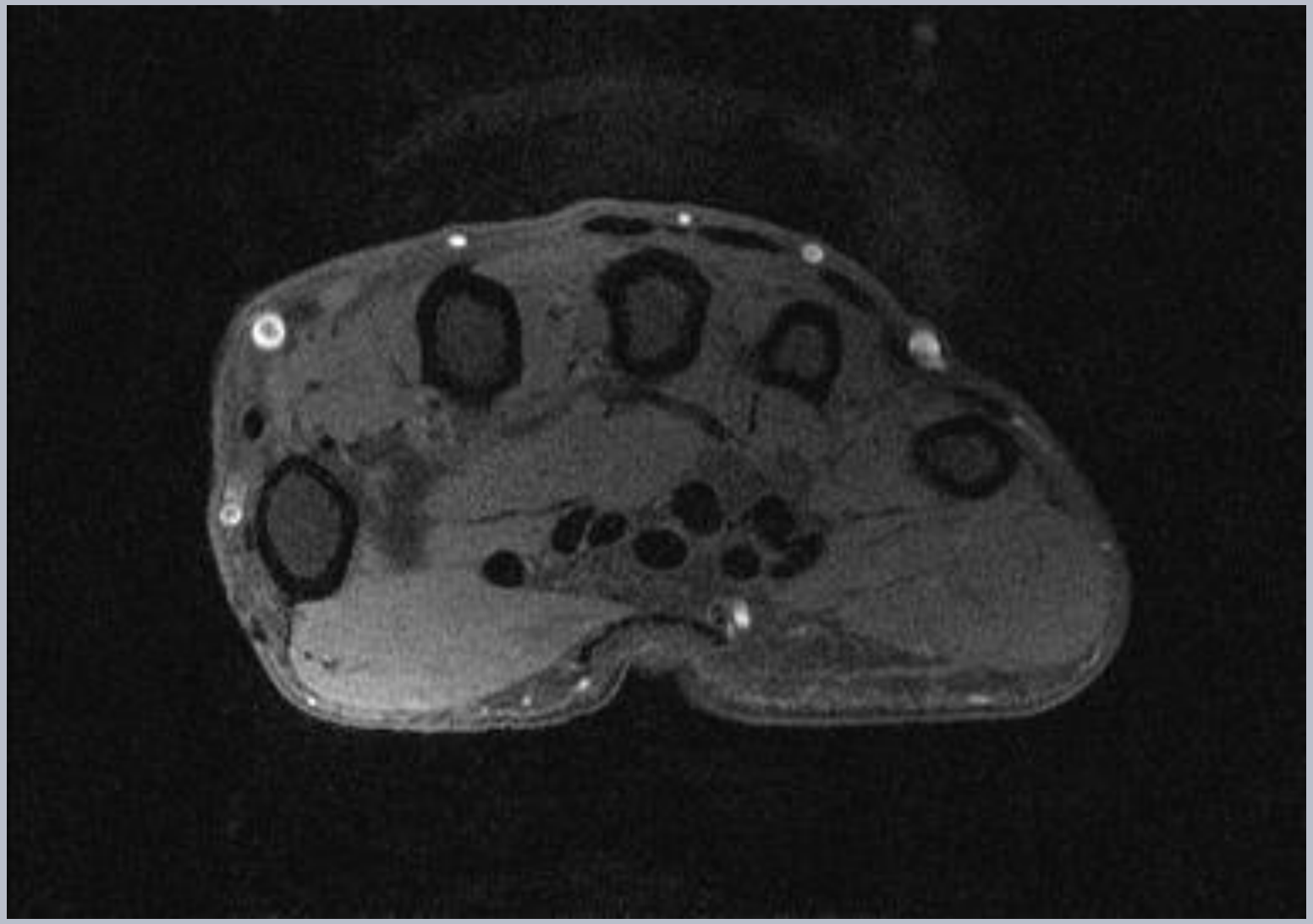


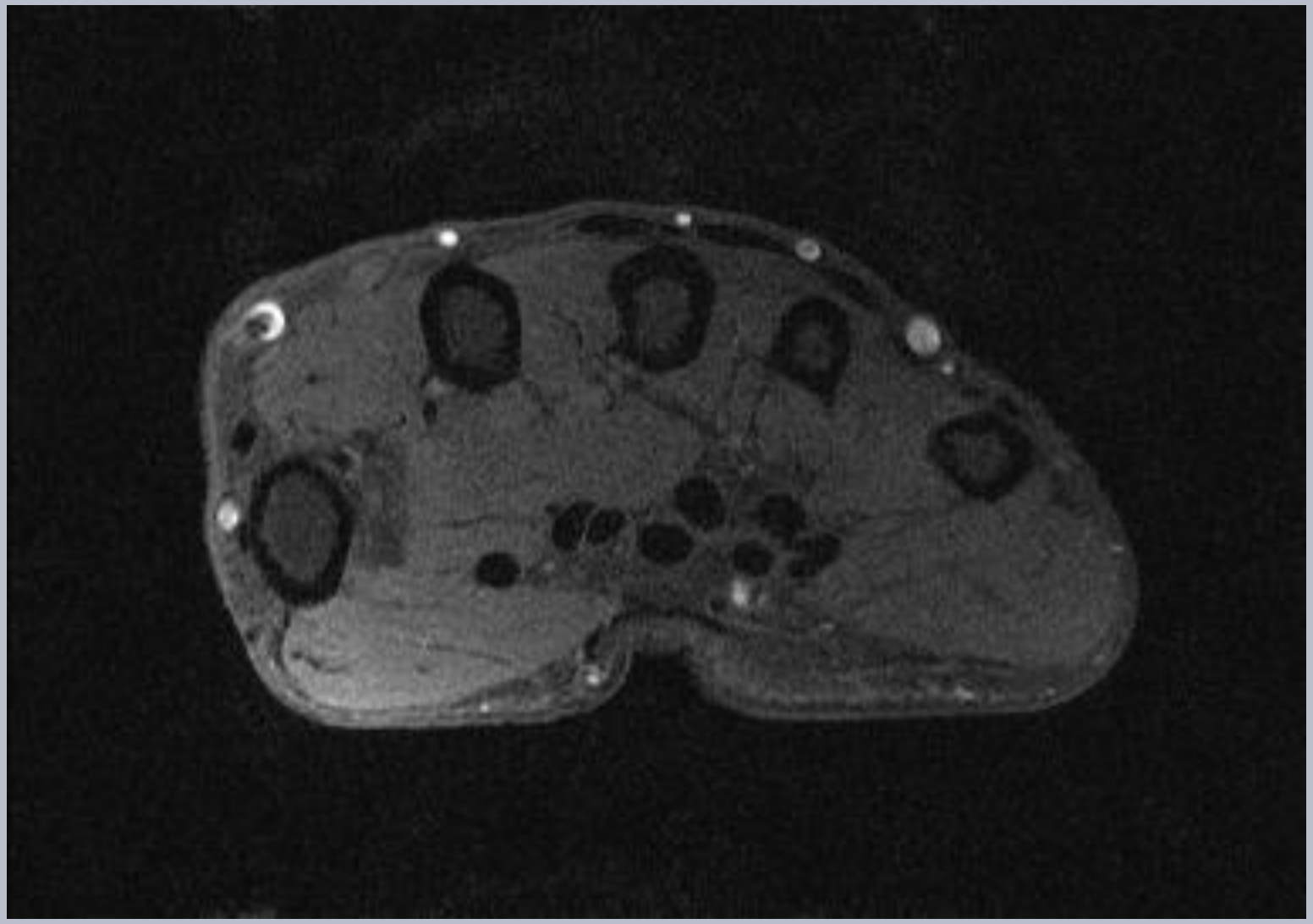




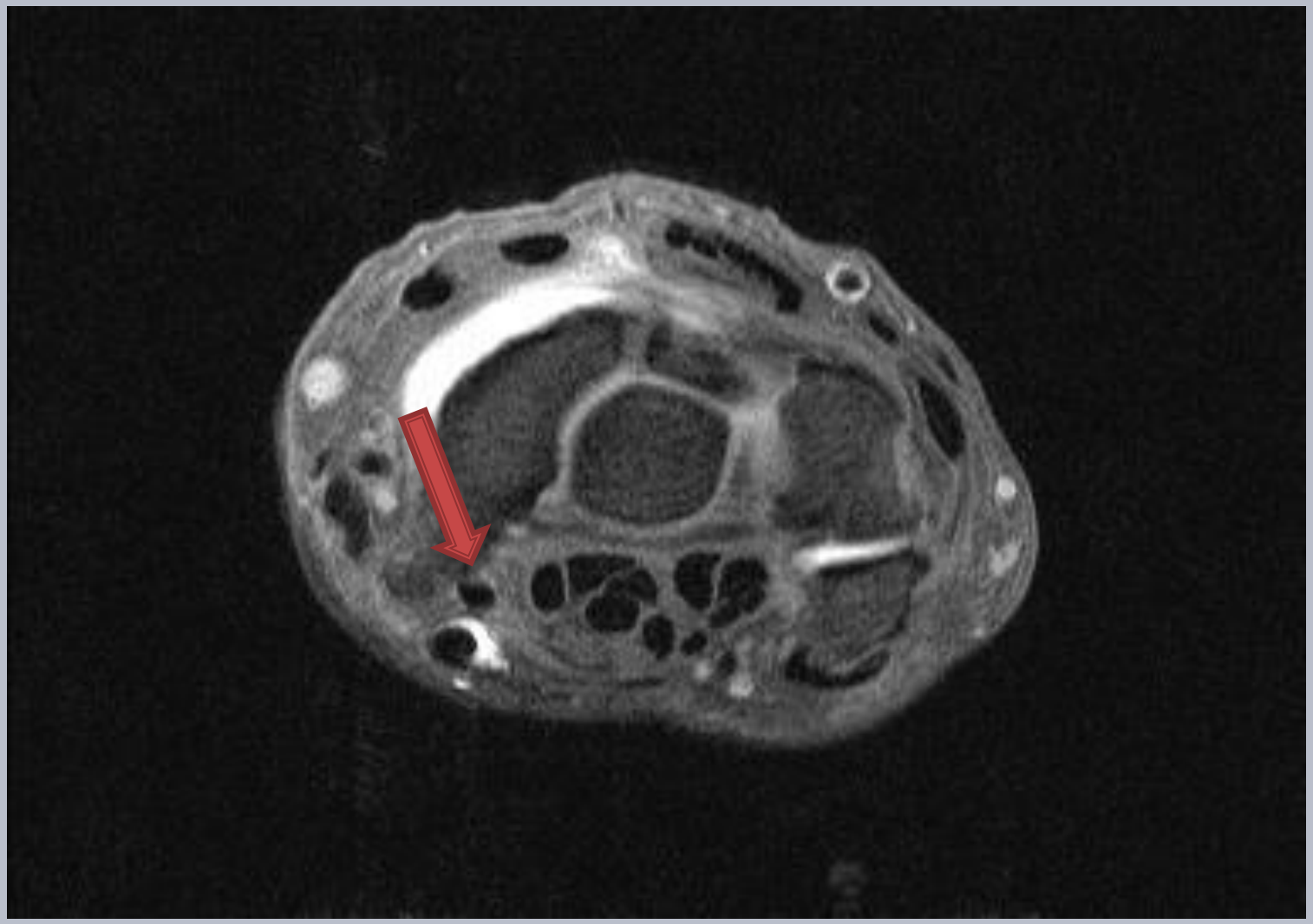








Accessory Flexor Carpi Radialis Brevis Vel Profundus



ANATOMICAL NOTE

FLEXOR CARPI RADIALIS BREVIS VEL PROFUNDUS

By ALICE CARLETON, M.A. (Oxon), M.B., N.U.I.
Department of Human Anatomy, University of Oxford

The abnormal muscle here described was found in both forearms of a British male dissecting-room subject. On the right side the muscle arose by a flat, fleshy belly 3½ in. long from the front and lateral sides of the radius, distal to the origin of the Flexor Pollicis Longus. The spindle-shaped belly crossed the pronator quadratus and gave way to a tendon 2 in. long, which passed obliquely beneath the Flexor Carpi Radialis to its ulnar side. The tendon spread out slightly on the ligaments covering the front of the carpus and was inserted into the capitate and the bases of the third and fourth metacarpal bones. The nerve supply of the muscle was from the volar interosseous. On the left side, the muscle was similar but smaller, and its fine tendon lost itself in the anterior carpal ligaments near the base of the index, so that an exact attachment to a particular bone was impossible to determine.

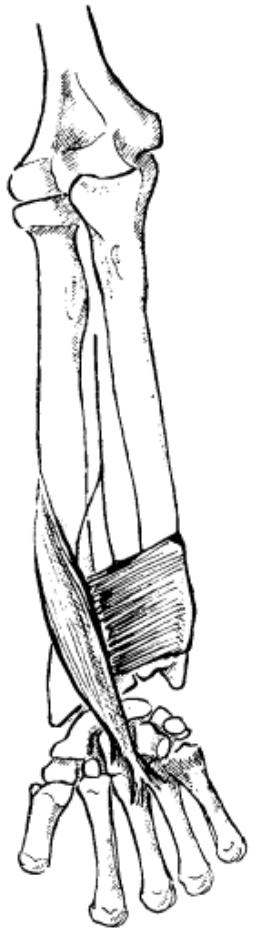


Fig. 1. Flexor Carpi Radialis Brevis vel Profundus.

This muscle has been described under various names. Fano (2) was first in the field in 1851 with the title "Radio-carpien." Le Double (6) calls it the "Court Radial Anterieur." He found it in 7 out of 170 cases, and quotes Macalister as finding it in 7 out of 177 cases. Wood (10), who gave the muscle the name of Flexor Carpi Radialis Brevis vel Profundus, found it in 8 out of 106 cases. The origin of the muscle is from the lower third of the radius on its anterior surface or border. Accessory fibres may reach it from various sources, e.g. the Pronator Teres, the antebrachial aponeurosis, the Flexor Pollicis Longus, the interosseous membrane, the ulna or the humerus, thus sometimes transforming it into a bicapitate muscle. The insertion may be into any metacarpal base except the first or fifth, and any carpal bone on the more radial side, or its covering ligaments. The nerve supply is from the volar interosseous.

Hourmouziades (4) observed a muscle almost precisely similar to the one here described, and Kater (5) describes two others with a similar origin, but the insertion in one case was into the common sheath of the flexor muscles, and in the other into the deep surface of the central portion of the palmar fascia.

The Flexor Carpi Radialis proper rarely receives a supplementary origin in man. Le Double (6) found no variation in the origin of the muscle in 105 cases examined. Hepburn (3), examining one gorilla, one chimpanzee, one orangutan, and one gibbon, found a radial head of the Flexor Carpi Radialis in all but the chimpanzee. The additional origin was from the oblique line of the radius, i.e. higher and on a more superficial plane than the muscle here described. Sonntag (8) says that the Flexor Carpi Radialis in chimpanzees arises

RadioGraphics

Accessory Muscles: Anatomy, Symptoms, and Radiologic Evaluation[1]

Paul A. Sookur, MRCP • Ali M. Naraghi, FRCR • Robert R. Bleakney, FRCPC • Rosy Jalan, FRCR • Otto Chan, FRCR • Lawrence M. White, MD

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LEARNING OBJECTIVES

After reading this article and taking the test, the reader will be able to:

- Describe the gross anatomy of the commonly occurring accessory muscles.
- Identify the characteristic imaging

A wide array of supernumerary and accessory musculature has been described in the anatomic, surgical, and radiology literature. In the vast majority of cases, accessory muscles are asymptomatic and represent incidental findings at surgery or imaging. In some cases, however, accessory muscles may produce clinical symptoms. These symptoms may be related to a palpable swelling or may be the result of mass effect on neurovascular structures, typically in fibro-osseous tunnels. In cases in which an obvious cause for such symptoms is not evident, recognition and careful evaluation of accessory muscles may aid in diagnosis and treatment.

Accessory Flexor Carpi Radialis Brevis Vel Profundus

- Very rare short radiocarpal flexor muscle
- Arises from the volar aspect of the distal radius, distal to the origin of the flexor pollicis longus
- Passes anterior to the pronator quadratus and crosses deep to the flexor carpi radialis

Accessory Flexor Carpi Radialis Brevis Vel Profundus

- Inserts onto the capitate and base of the third and fourth metacarpals
- Typically described in cadavers but can cause symptoms of carpal tunnel syndrome
- “To our knowledge, there are no descriptions of the imaging characteristics of this muscle”

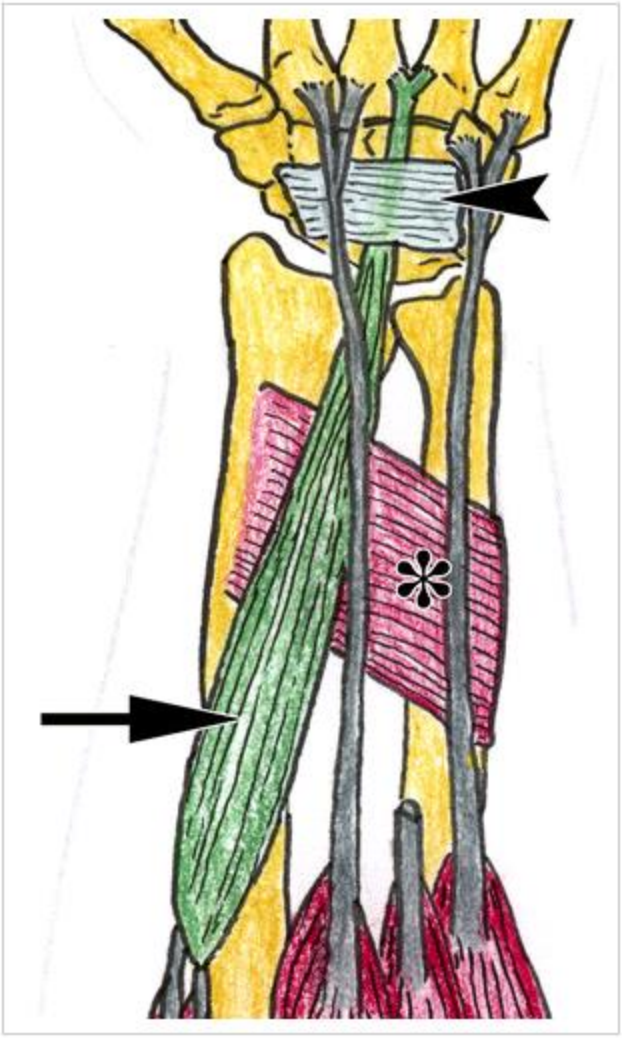

Figure 7. Drawing illustrates the flexor surface of the distal forearm, with an FCR brevis vel profundus (arrow) arising from the distal radius, traversing superficial to the pronator quadratus (*), and passing deep to the flexor retinaculum (arrowhead).

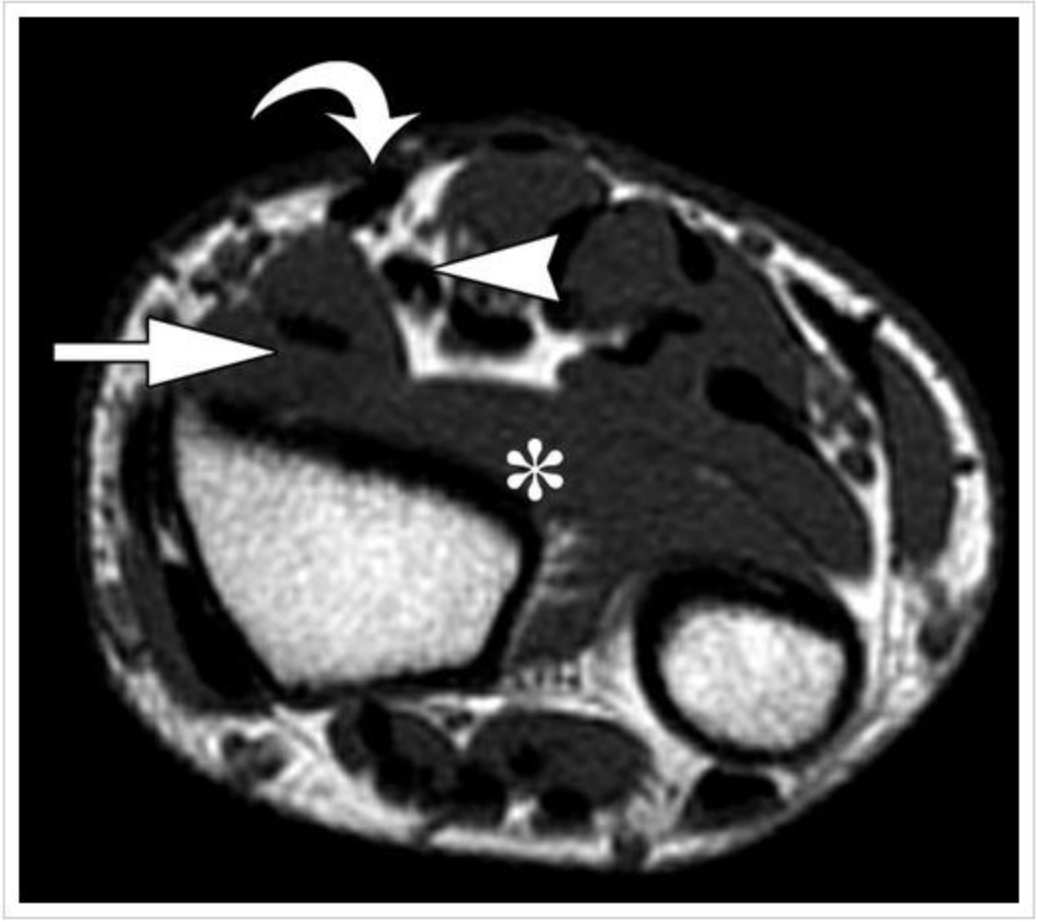

Figure 8. FCR brevis vel profundus in a 22-year-old patient who presented with volar soft-tissue swelling. Axial T1-weighted MR image of the wrist shows no masses, but a prominent accessory muscle (straight arrow) is seen deep to the FCR (curved arrow) and superficial to the pronator quadratus (*) on the radial aspect of the FPL (arrowhead).