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MICROANGIOPATHIES IN RENAL PERCUTAENOUS BIOPSIES AT THE UNIVERSITY HOSPITAL OF SPLIT

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AIM: to present 29 years of experience in nephropathological diagnostics in University Hospital of Split, with special emphasis on microangiopathies.

METHODS: we collected clinical and pathological data of all renal biopsied patients since the first renal biopsy performed in December 1994. The most common were glomerular diseases, but here we point microangiopathies, which are relatively rare but need to be mention because sometimes dramatic clinical presentation and subtle histological features are crucial for diagnosis.

RESULTS: From 1994 until April 2023, almost 600 biopsies were performed. In the last few years, the number of biopsies has increased from 12 to 64 per year, confronting us with a daily nephrological routine and high clinical expectations (Figure 1). Since 2004, the pre-analytical process has been carried out in our laboratory, and the electron microscopic analysis at the Faculty of Medicine of the University of Zagreb. The most common diagnosis in our cochort was IgA nephropathy in men and focal segmental glomerulosclerosis in women. In the last two years, microangiopathies were diagnosed in five cases (Table 1). Characteristic findings were hyperplastic vessel wall, subendothelial edema and fibrin thrombi in vessels and glomeruli (Figure 2). In four cases the correct diagnosis was made by light microscopy, but the last one had to be corrected after expert supervision.
An autistic 17-year old patient with a history of epilepsy, was presented with hypertensive encephalopathy and retinopathy caused by renal insufficiency. Antistreptolisin titer was high. During that hospitalisation, periapical granulomas were surgicaly removed and renal biopsy was performed. Mild endocapilary proliferation, acute tubular injury, arterial thrombosis and focal fibrinoid necrosis of arterial wall, surrounded by granulomatous inflammation was found (Figure 3) and the diagnosis of postinfective glomerulonephritis with granulomatous intestitial nephritis was made. A consultation led to final diagnosis - necrotising vasculitis, polyarteritis nodosa should be excluded.

CONCLUSION: With more biopsies comes experience. In challenging nephropathological diagnostics, the help of a supervisor is sometimes required for a correct diagnosis. With the now available transmission electron microscope at the University of Split, we have the opportunity to extend our knowledge and hope to establish complete and high-quality nephropathological diagnostics.

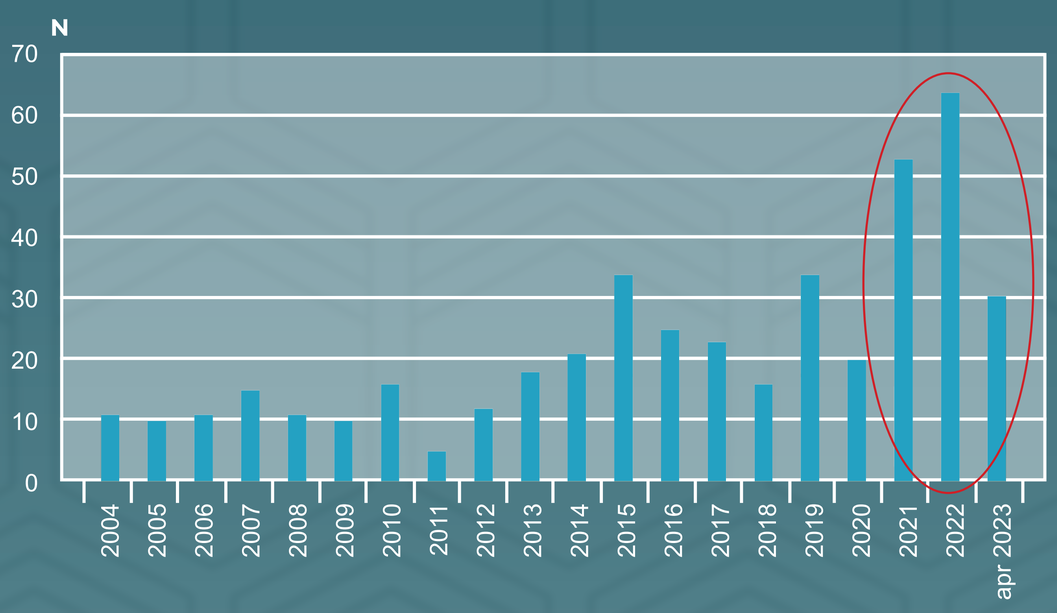

FIGURE 1. Number of percutaneous renal biopsies per year from 2004 to the present in the University Hospital of Split, Croatia

TABLE 1. Patients with microangiopathies in last few years (2020-2022)

Patient	Gender	Age	Disease
KA	m	24	Thrombotic microangiopathy
MA	f	50	Microscopic angitis
BA	m	37	Thrombotic microangiopathy
ČB	f	43	Thrombotic microangiopathy
BE	m	18	Polyarteritis nodosa

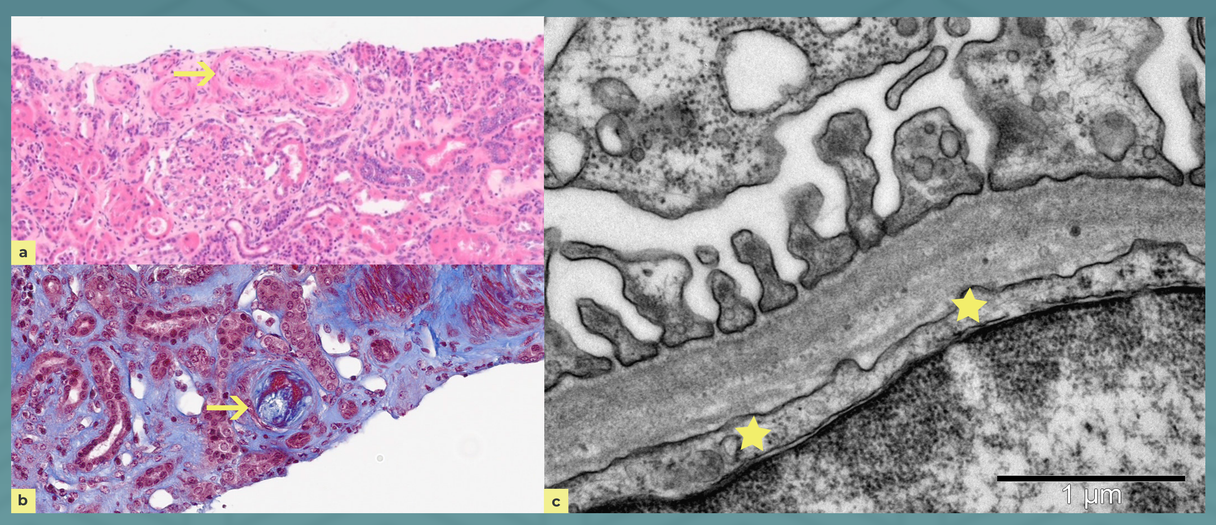

FIGURE 2. Thrombotic microangiopathy (Patient No. 3) - mucoid edema (a), luminal thrombi and fibrinoid necrosis in the wall of small blood vessels (arrows), as well as mucoid substance in the subendothelial space (asterisk) (HE and Masson trichrome 400x; EM 30.000x).

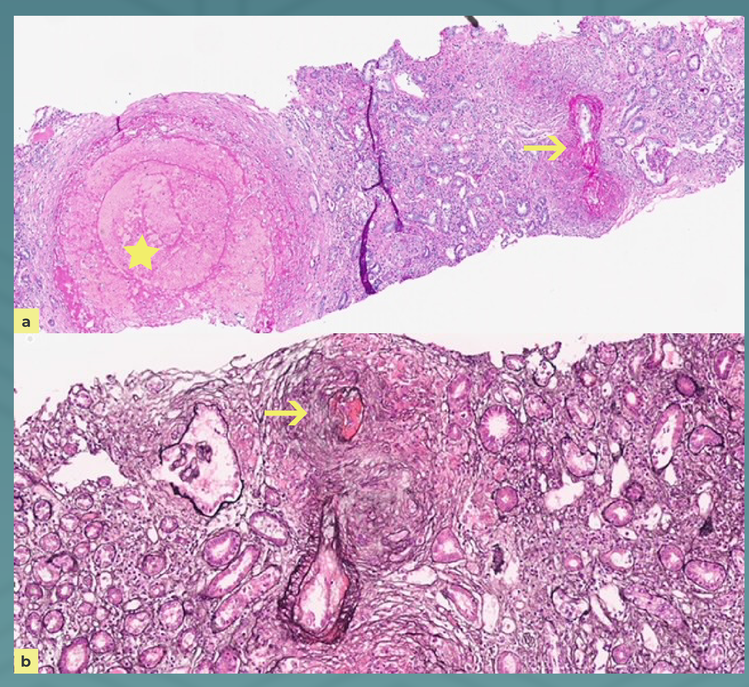

FIGURE 3. Polyarteritis nodosa (Patient No. 5) – acute necrosis and complete thrombosis of a muscular artery (a, asterisk), and fibrinoid necrosis of the wall of a small artery with granulomatous inflammation (a and b, arrow) HE and Jones 400x)

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