

NODULAR ARTERIOLARHYALINOSIS AS HISTOPATHOLOGICAL HALLMARK OF CALCINEURIN INHIBITOR NEPHROTOXICITY. ENTAIL ALWAYS THE SAME CLINICAL SIGNIFICANCE ?

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Introduction: NAH is a characteristic although not specific histological finding of CNI nephrotoxicity. When observed, withdrawal or minimization of CNI are usual strategies.

The objective of our study is to assess why among those patients showing strong NAH in renal graft biopsies who underwent CNI withdrawal, some of them presented very poor outcome while others improved graft function

Material and Methods: We performed 207 renal graft biopsies between January 2011 and May 2014 due to clinical criteria. In 13 patients major histopathological finding were severe NAH. Mean age 48 years old, 10 of them were male. All were under triple immunosuppressive therapy with steroids, mycophenolate and CNI (6 on Tacrolimus and 7 on Cyclosporine A). CNI withdrawal was performed at all cases.

Results: We selected 2 groups: Good outcome and poor outcome. Eight patients showed good outcome with stabilization or improvement of graft function. Five patients presented poor outcome requiring chronic hemodialysis.

Patient	Dialysis prior to KT	Time (months) from KT	Age	CNI	SC at the time of RB	Current SC	Banff at cortex without atrophy					Cortex with tubular atrophy and interstitial fibrosis		Global Score
							Inters. Inf.	Tubulitis	Glom. Inflamm.	Art. Infl.	Hya. Art.	IF/TA Infil.	IF/TA Tub.	
1	6	112	37	1	2,11	1,77	0	0	0	0	3	1	0	1
2	42	50	50	1	2,68	2,53	0	0	2	0	2	0	0	0
3	22	52	52	2	2,46	2,98	0	0	0	0	3	2	1	2
4	24	4	62	1	2,7	2	0	0	0	0	2	0	0	0
5	2	38	31	1	1,1	1,27	0	0	0	0	3	1	1	1
6	15	180	55	2	2	1,94	0	0	0	0	3	0	0	0
7	32	84	64	2	5,1	1,83	0	0	0	0	3	0	0	0
8	9	120	59	2	1,6	1,21	0	0	0	0	3	0	0	0
9	23	96	51	2	3,2	HD	0	0	3	0	3	2	1	2
10	28	55	55	1	2,4	HD	0	0	0	0	2	1	1	1
11	9	120	27	2	3,23	HD	1	1	0	0	3	2	1	3
12	72	115	48	2	3,38	HD	0	0	0	0	3	1	1	1
13	16	108	33	1	2,1	HD	0	0	0	0	3	0	0	0
MEAN	23,76	87,2	48		2,6									

References: KT: Kidney Transplantation; CNI: Calcineurininhibitor. 1: Advagraf, 2: Ciclosporina, SC RB: Serum Creatinine at Renal biopsy time mg/dl, SC: current serum creatinine mg/dl. **Interstitial inflammation:** 0:<10%; 1:10-25%; 2: 26-50%; 3 >50%. **Tubulitis:** 0:0; 1: 1-4; 2:5-10; 3: >10**Glomerular inflammation:** 0:0; 1:<25%; 2 :25-75%; 3:>75%. **Arterial Inflammation:** 0:0; 1: intimal involvement < 25%; 2: f intimal involvement ≥ 25%; 3: transmural inf. or fibroid necrosis. **Hyaline Arteriopathy:** 0: non hyaline deposits, 1: focal deposits at single arteriole; 2: focal deposits at more than one arteriole; 3: transmural or circumferential hyaline deposits. **IFTA Infiltration:** 0 :<10%; 1:10-25%; 2:26-50%;3>50%. **Tubulitis in IFTA areas:** 0:0; 1:1-4; 2:5-10; 3>10%. **Global Score:** Interstitial inflammation plus FIAT inflammation areas

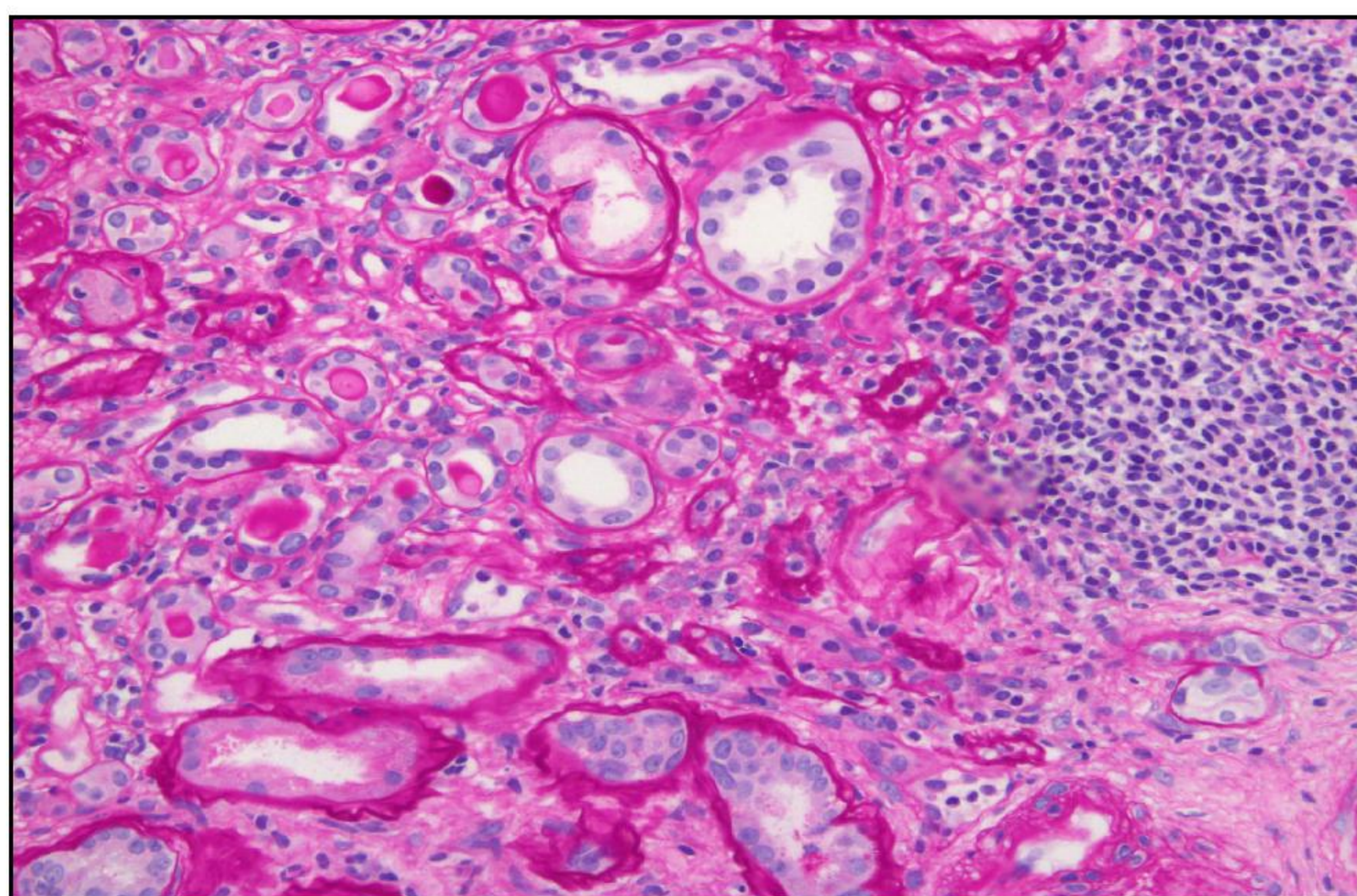


Figure 1. Lymphocytic infiltrates at fibrosis and atrophic tubules with tubulitis. (PAS x 20)

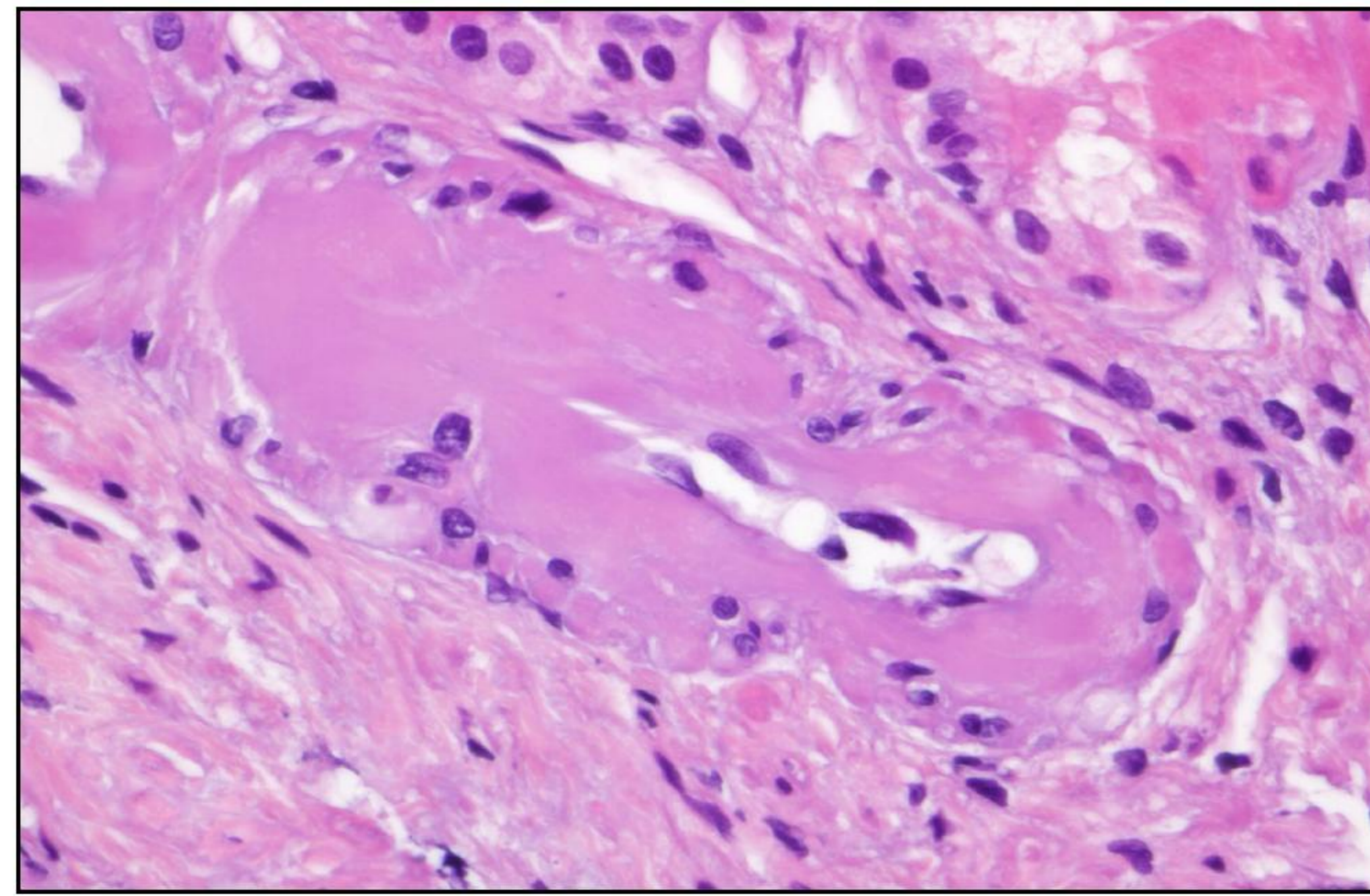


Figure 2. Arteriolar hyaline deposits with circumferential and transmural with peripheral nodules. (H & E, x 40)

Conclusions: NAH is not a risk factor for poor renal graft outcome per se. Other histopathological findings, usually considered as secondary markers, like the inflammation score should be considered before deciding CNI withdrawal

