

ULTRAZVUKOVÉ VYŠETŘENÍ PERIFERNÍCH LYMFATICKÝCH UZLIN

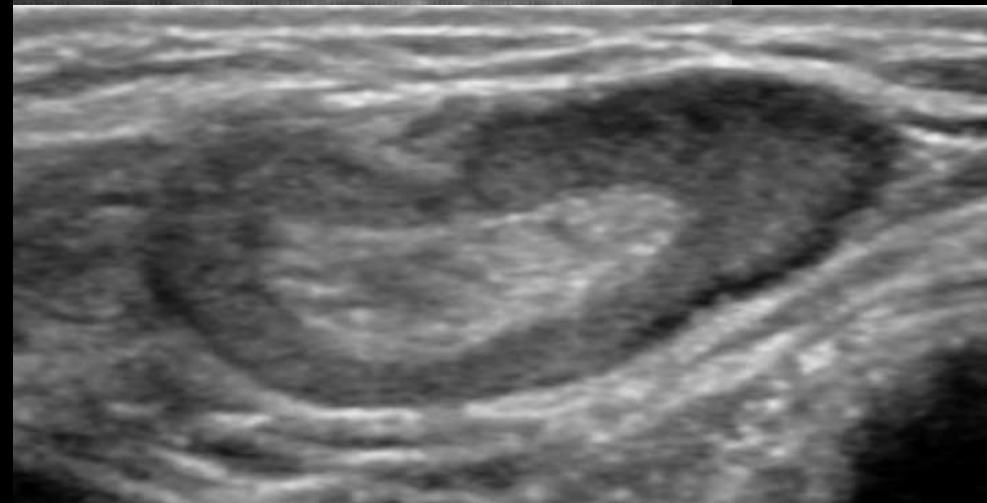
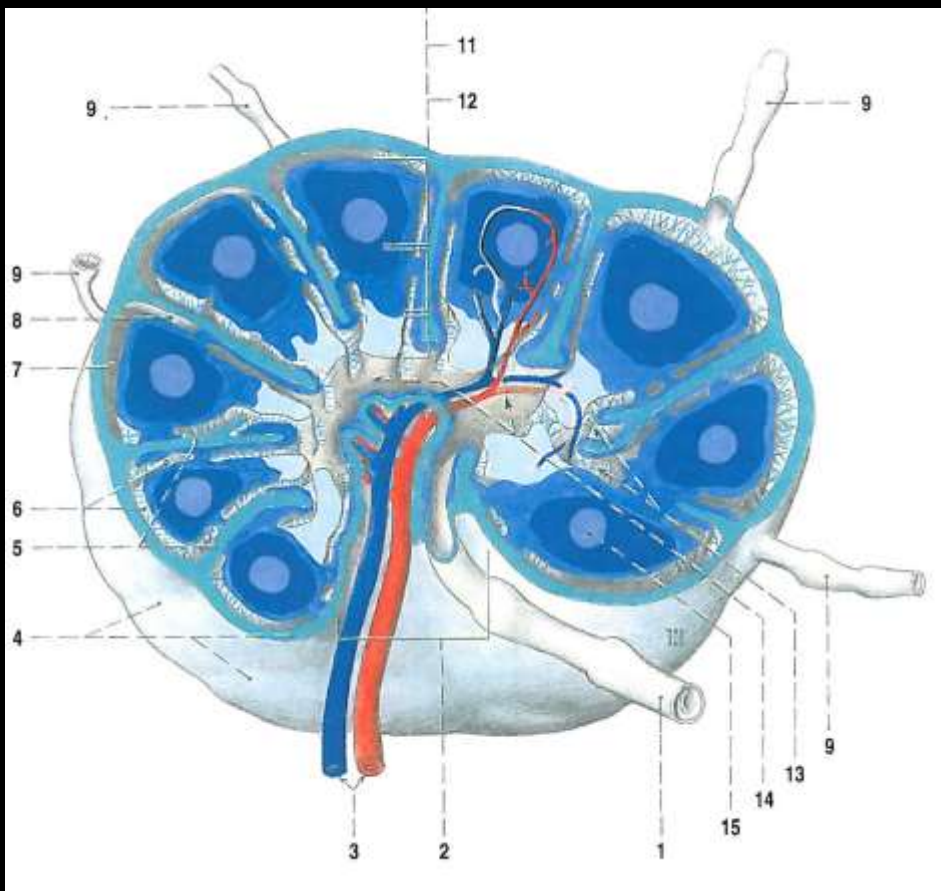
Radka Šlaisová

Klinika radiologie a nukleární medicíny FN Brno a LF MU
přednosta: prof. MUDr. Vlastimil Válek, CSc., MBA, EBIR

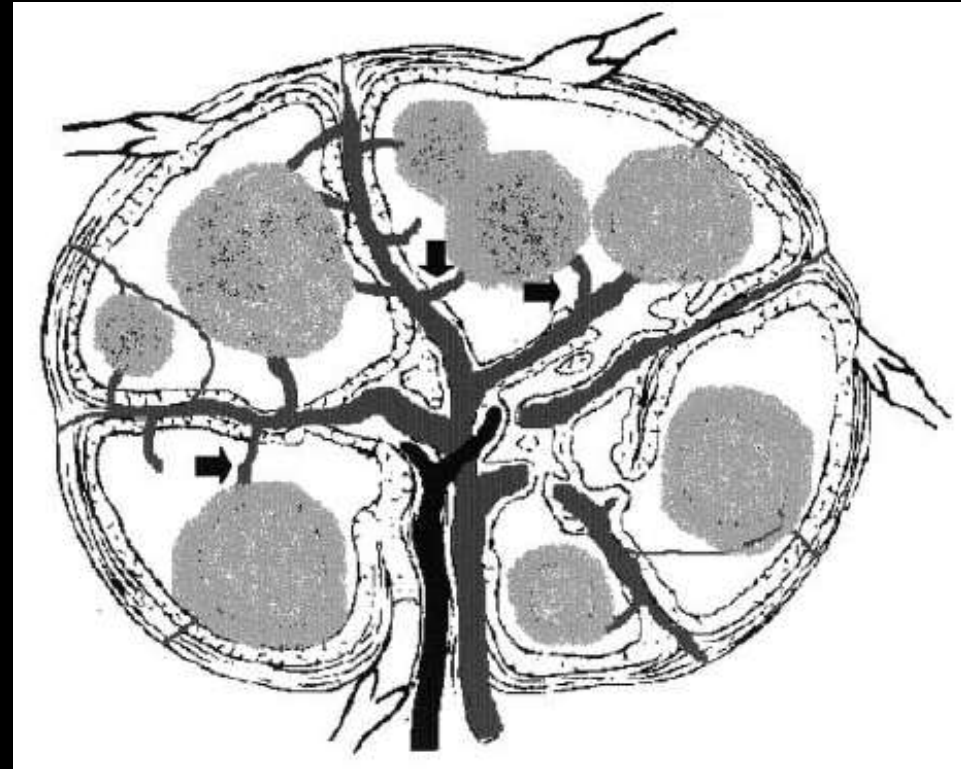
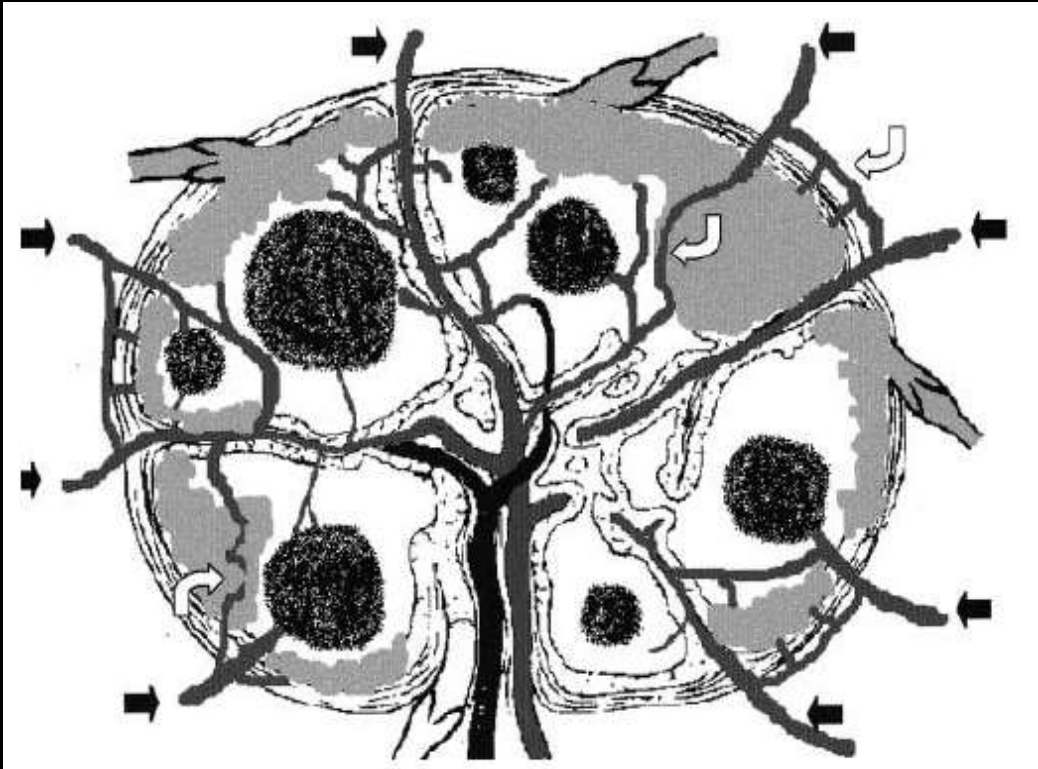
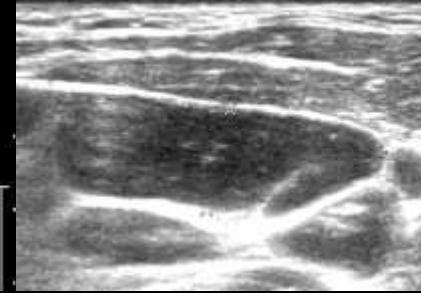
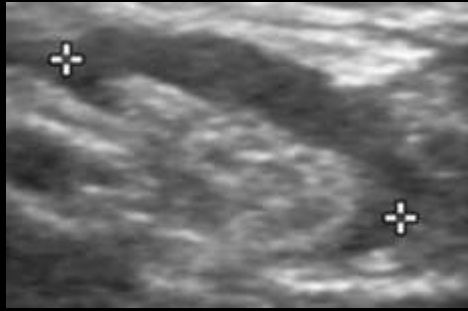
- Metoda první volby při podezření na periferní lymfadenopatii
- Lineární vysokofrekvenční sondy, detailní zhodnocení echostruktury – benigní vs maligní etiologie

- Velikost, tvar
- Echogenita
- Ohraničení
- Nekrózy
- Kalcifikace
- Vaskularizace

Normální LU

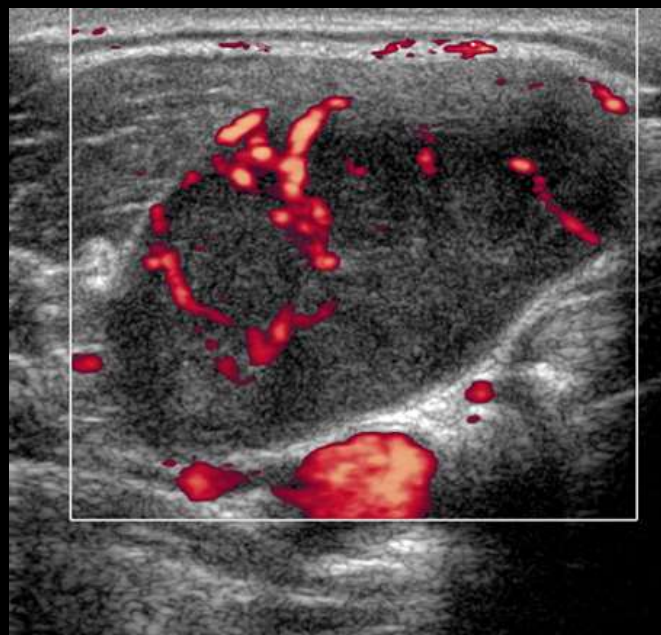
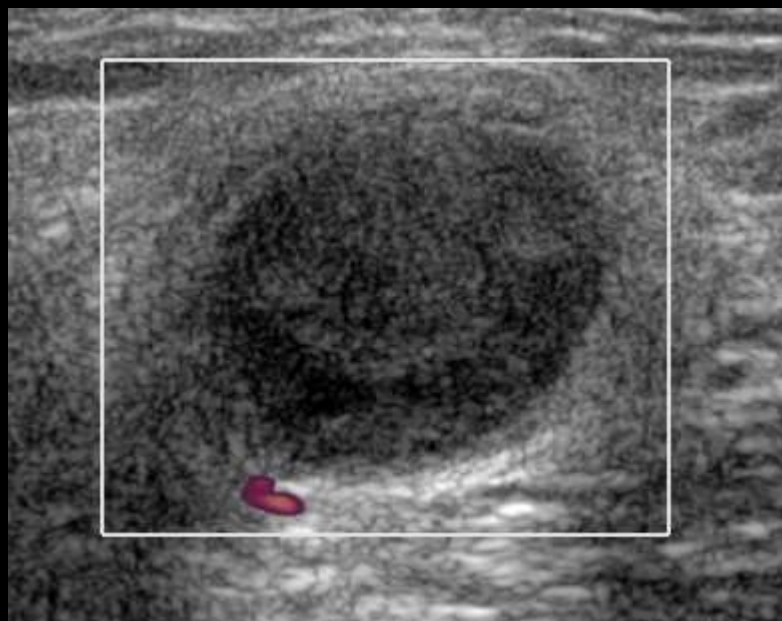
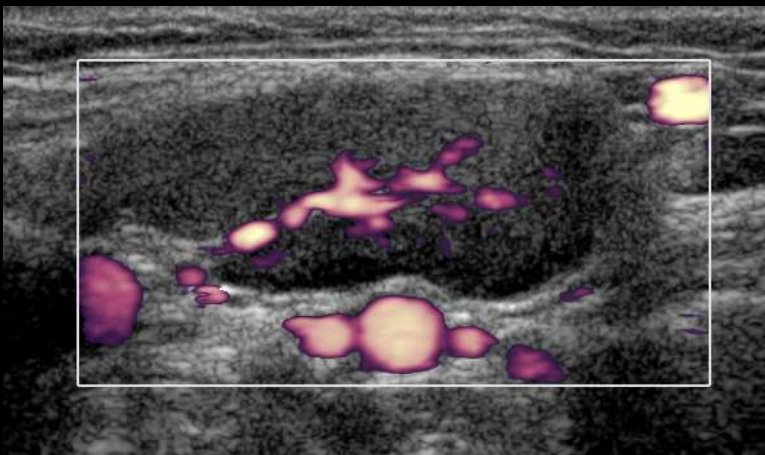


- Čihák R. Anatomie 3. 1., Praha: Grada Publishing 1997, str.172. ISBN 80-7169-140-2.



- Giovagnorio F, Galluzzo M, Adreoli Ch, et al. Color Doppler Sonography in the Evaluation of Superficial Lymphomatous Lymph Nodes. *J Ultrasound Med* 2002, 21:403-408

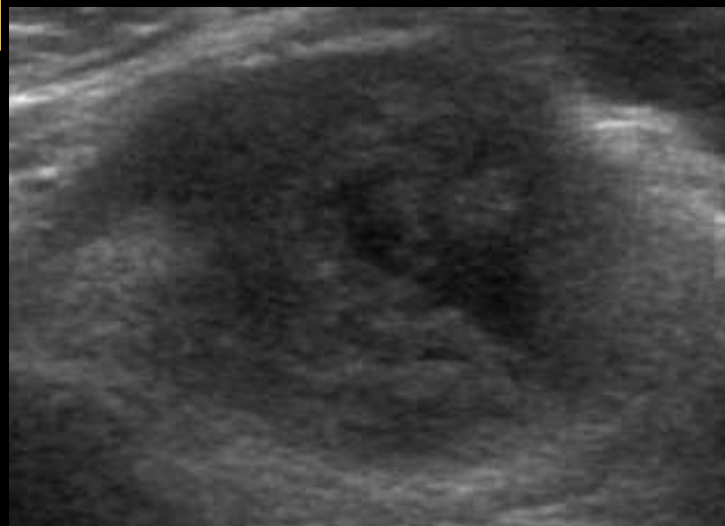
LI index, velikost



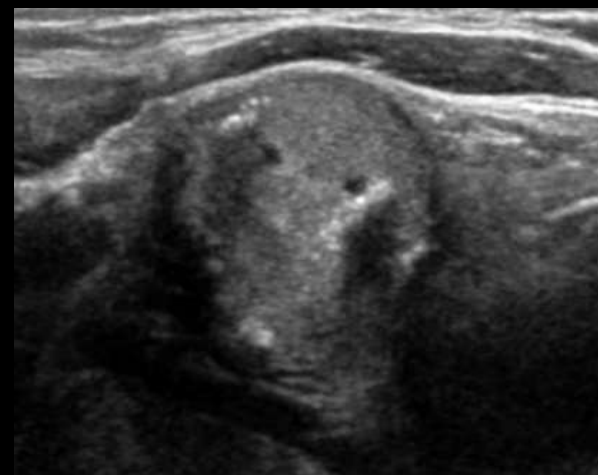
Echogenita



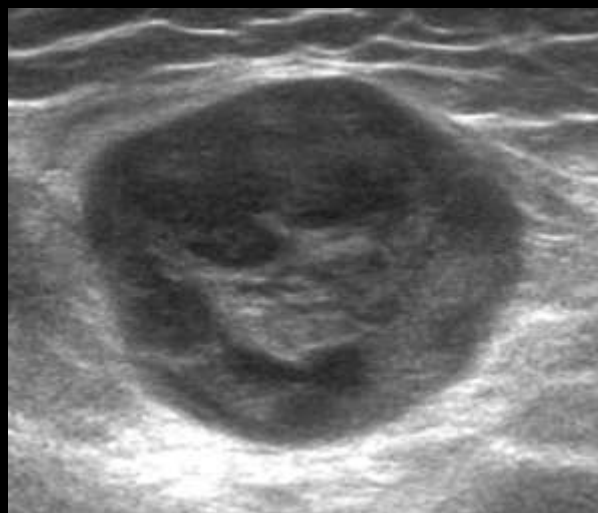
DLBCL



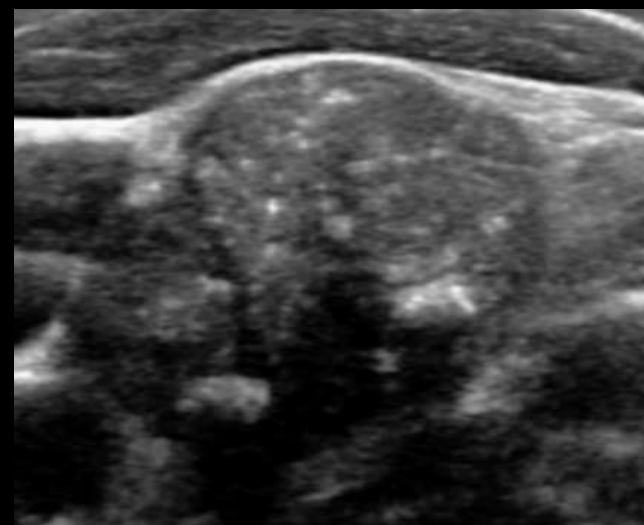
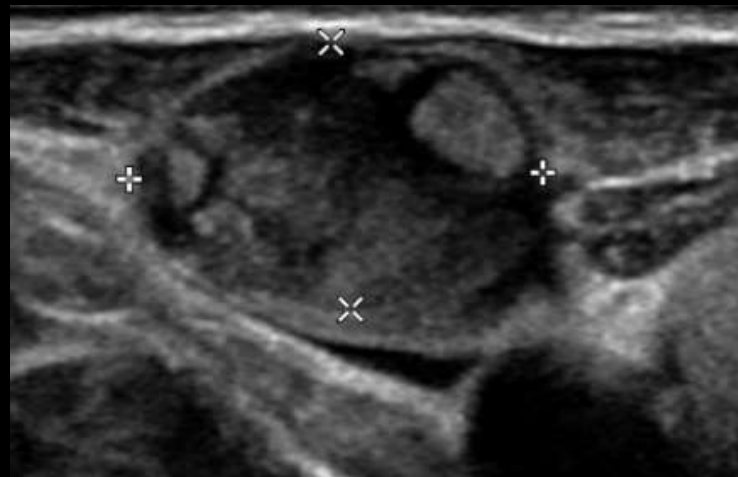
spinoCa dutiny ústní, patrové tonsily



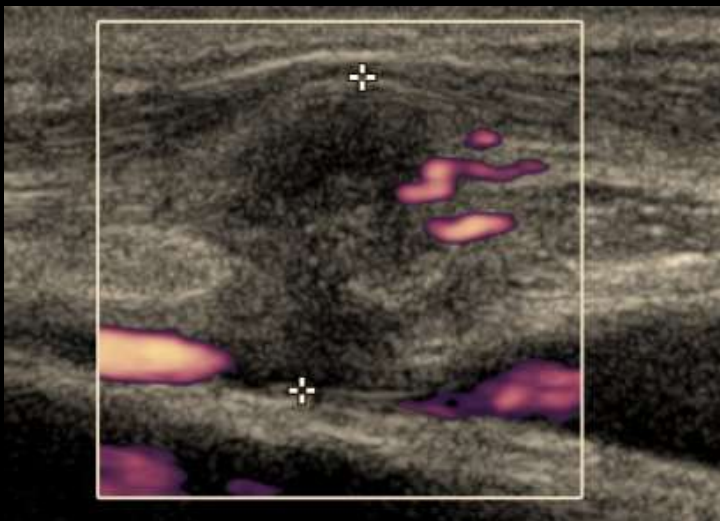
papilární ca štítnice



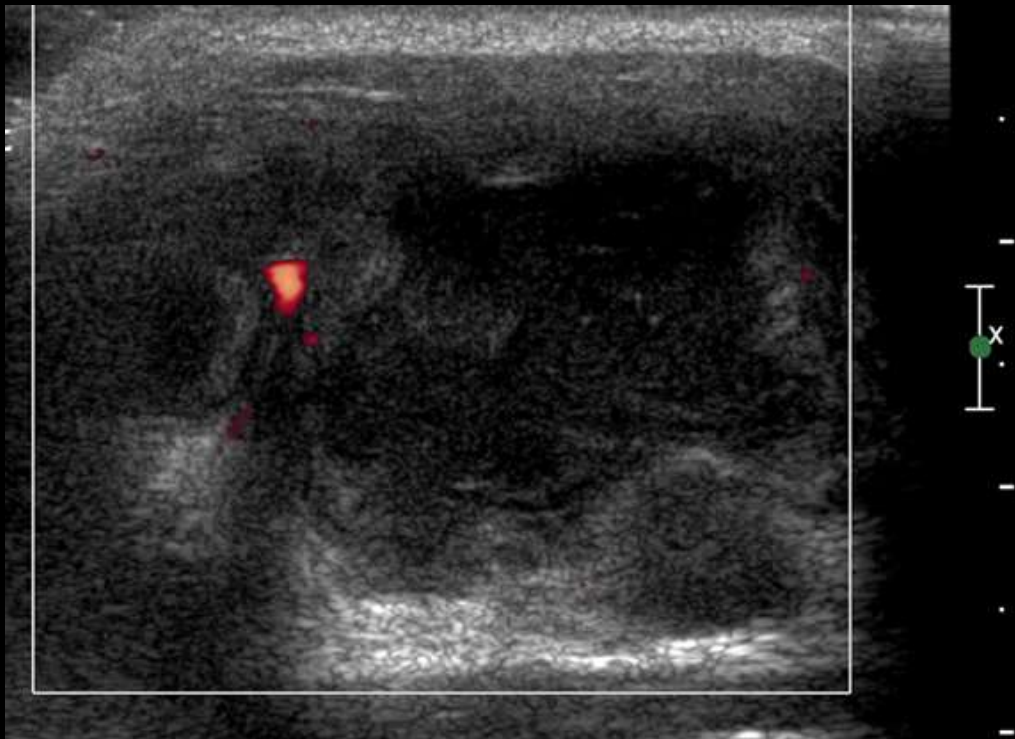
HL, bohatý na lymfocyty



Nekrózy, ohraničení



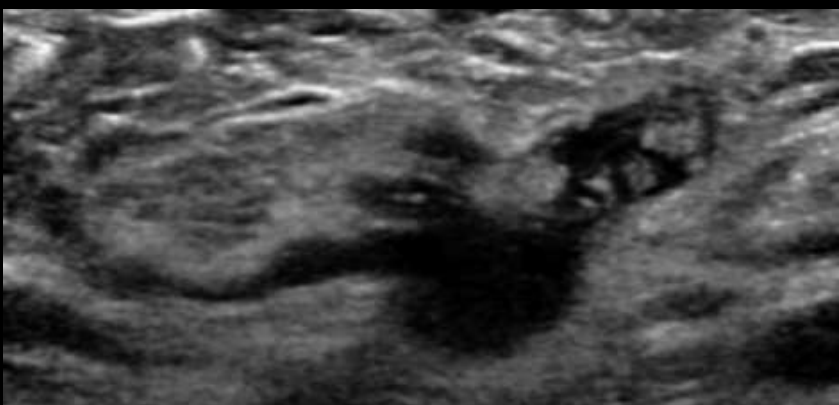
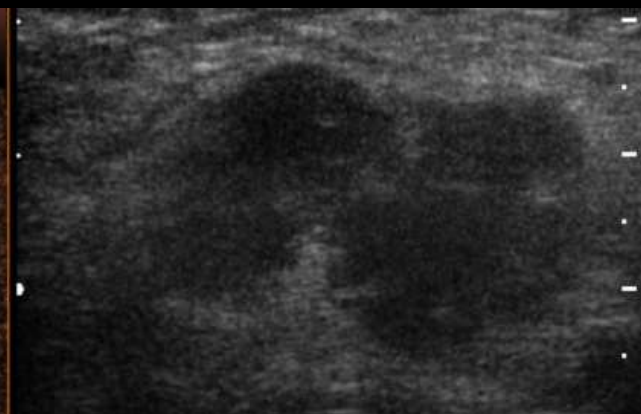
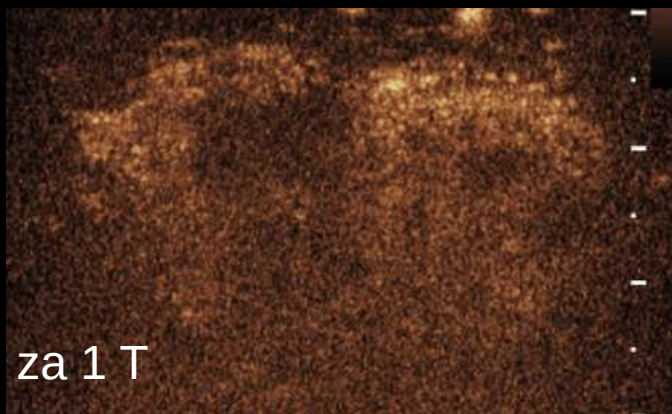
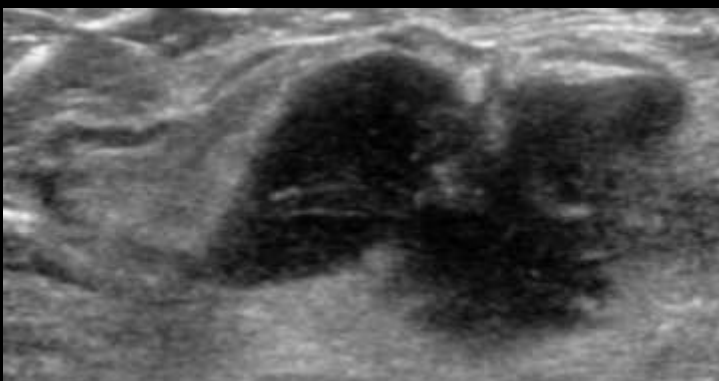
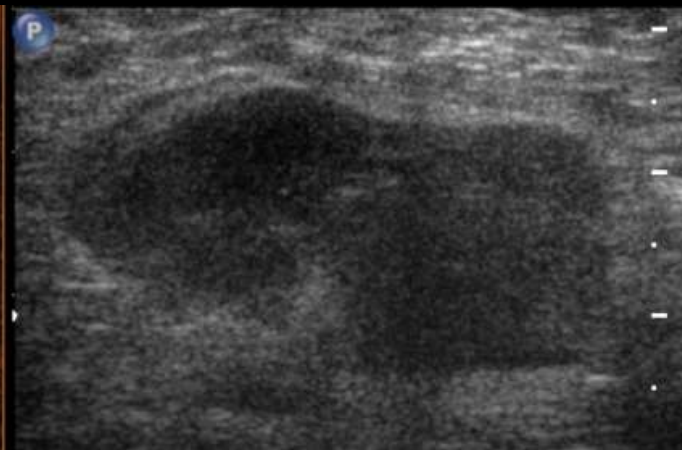
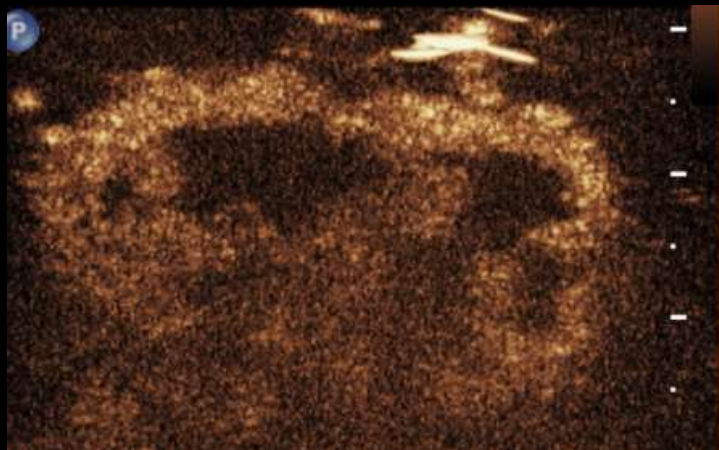
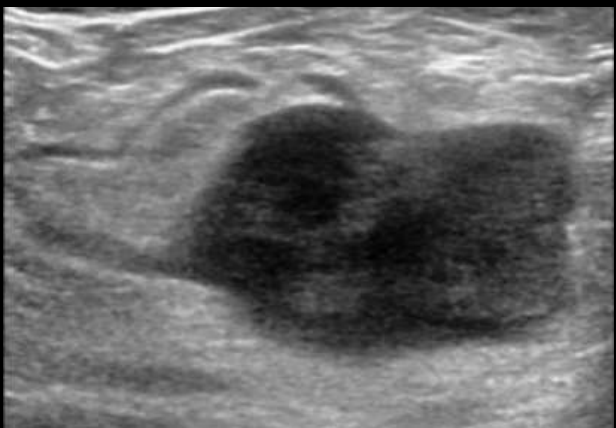
Nekrózy, ohraničení



TBC

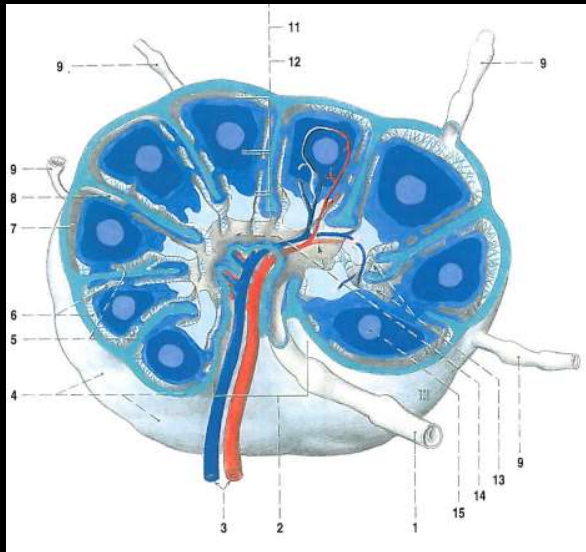


Purulentní lymfadenitida axilární
uzliny - Stafylokok koaguláza
negativní

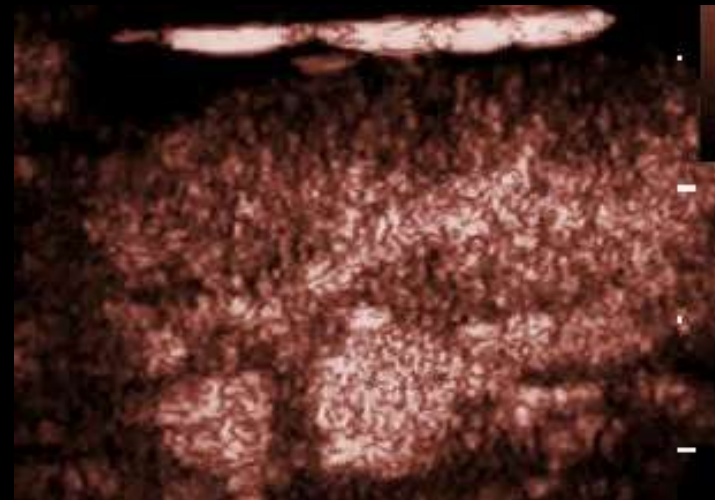
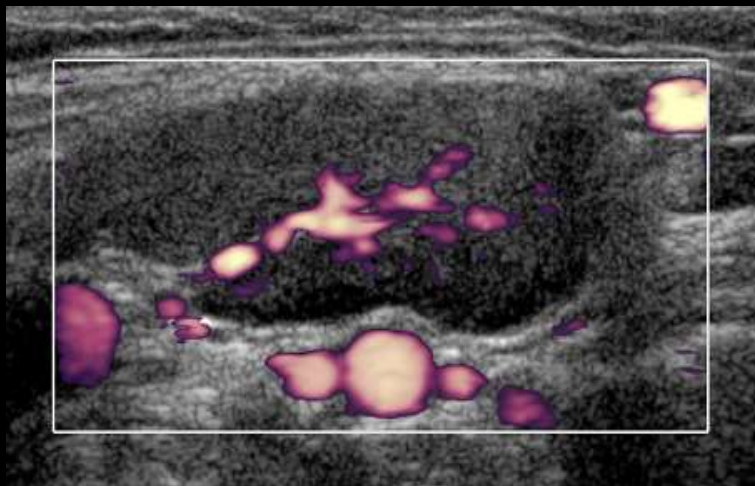
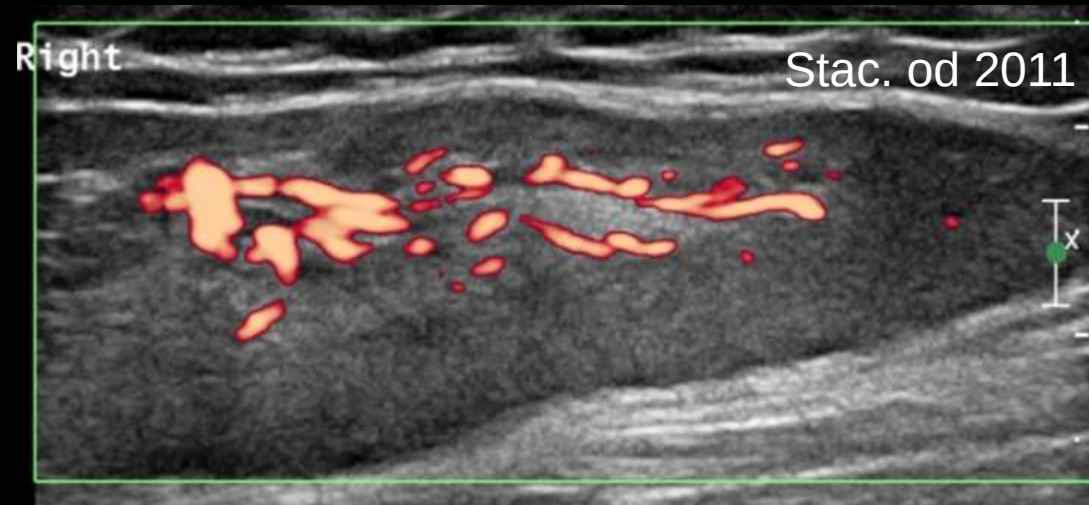


za další 3 T

Vaskularizace



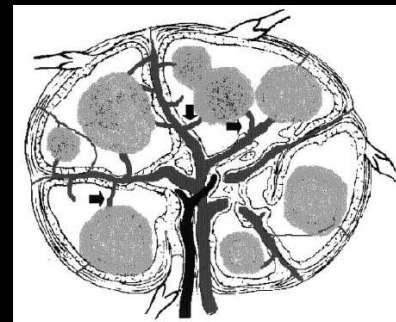
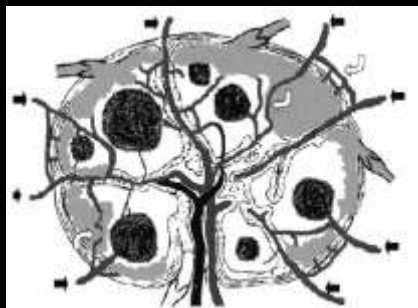
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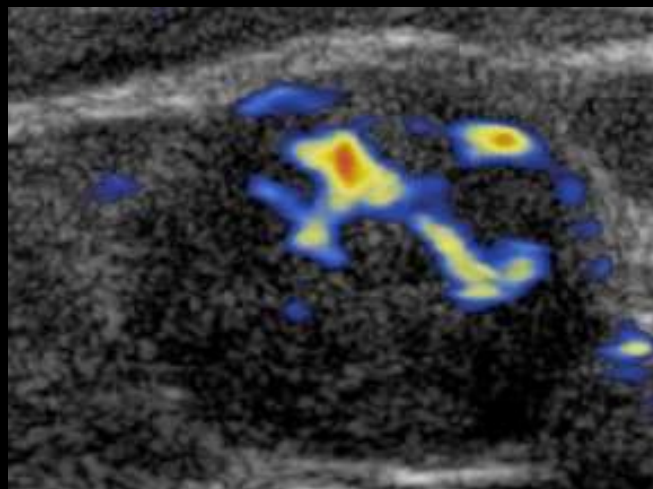
Sinusová histiocytóza

Vaskularizace

- Odtlačení intranodálních cév
- Akcesorní hilové cévy
- Avaskulární intranodální okrsky
- Subkapsulární cévy v periferii
- *Tschammler A, Ott G, Schang T, et al. Lymphadenopathy: differentiation of benign from malignant disease-color Doppler US assessment of intranodal Angioarchitecture. Radiology 1998;208:117-123*
- *Bialek EJ, Jakubowski W, Szczepanik AB, et al. Vascular patterns in superficial lymphomatous lymph nodes: A detailed sonographic analysis. Journal of Ultrasound 2007;10:128-134.*
- Periferní arteriální rezistence ???
- **CEUS – hypovaskularizované uzliny – nehomogenní sycení**
- *Jin Y., He YS., Zhang MM et al. Value of contrast-enhanced ultrasonography in the differential diagnosis of enlarged lymph nodes: a meta-analysis of diagnostic accuracy studies. Asian Pac J Cancer Prev, 2015;16(6): 2361-2368.*



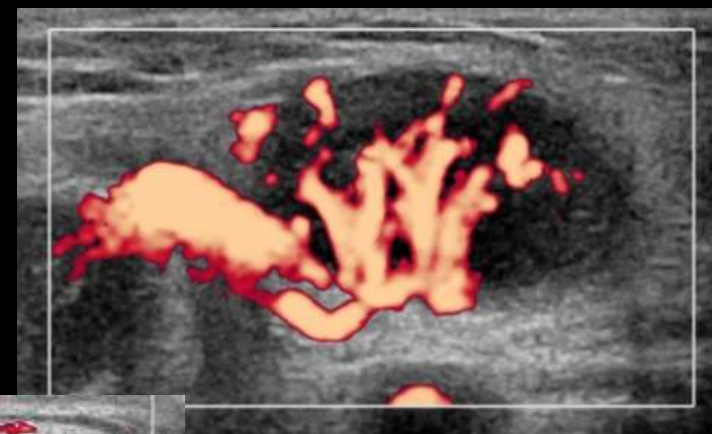
- Giovagnorio F, Galluzzo M, Adreoli Ch, et al. Color Doppler Sonography in the Evaluation of Superficial Lymphomatous Lymph Nodes. J Ultrasound Med 2002, 21:403-408



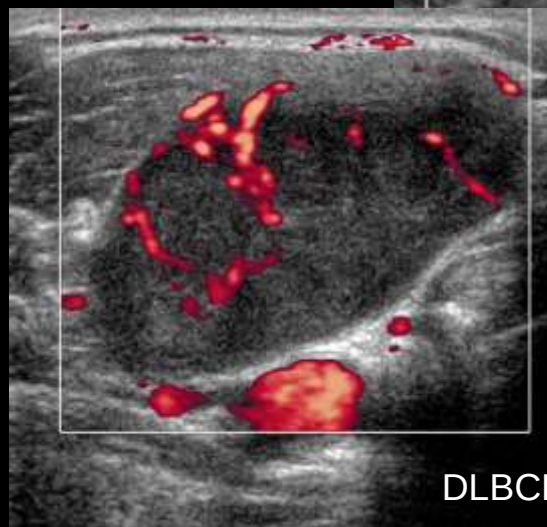
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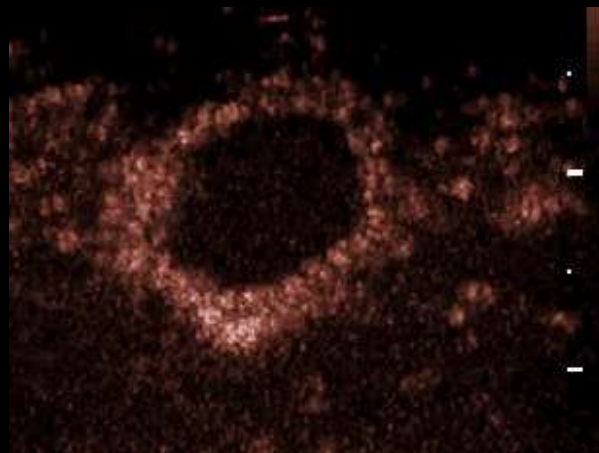
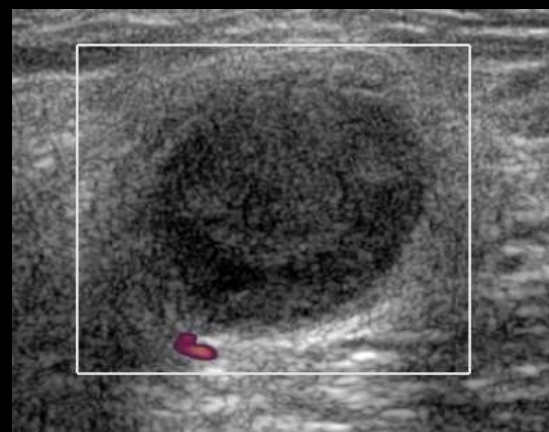
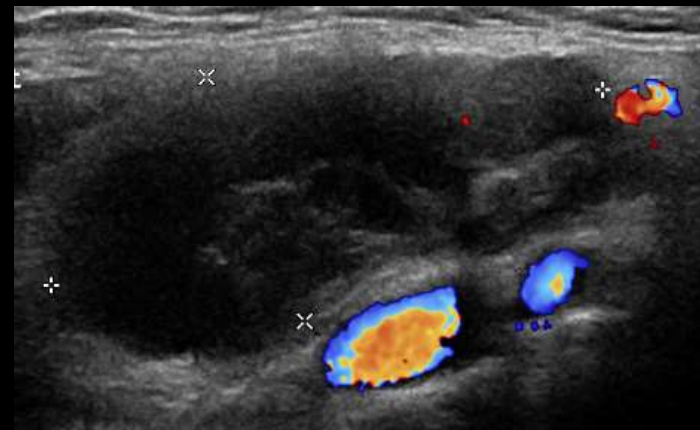
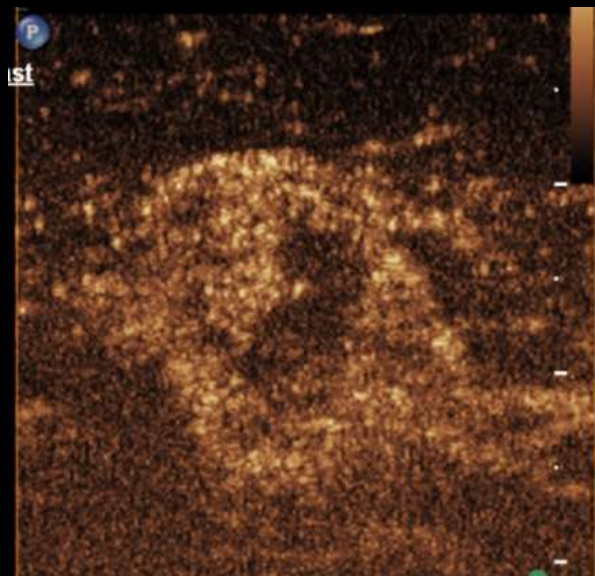
Mantle cell l.



Periferní T lymfom

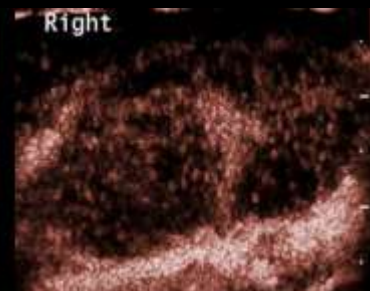
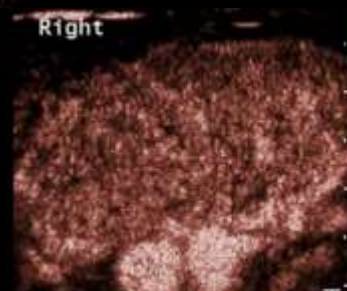
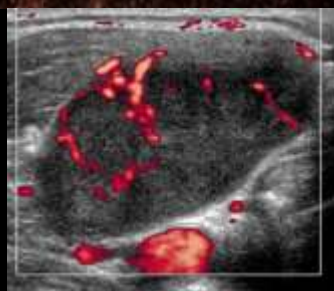


DLBCL



spinoCa patrové tonsily

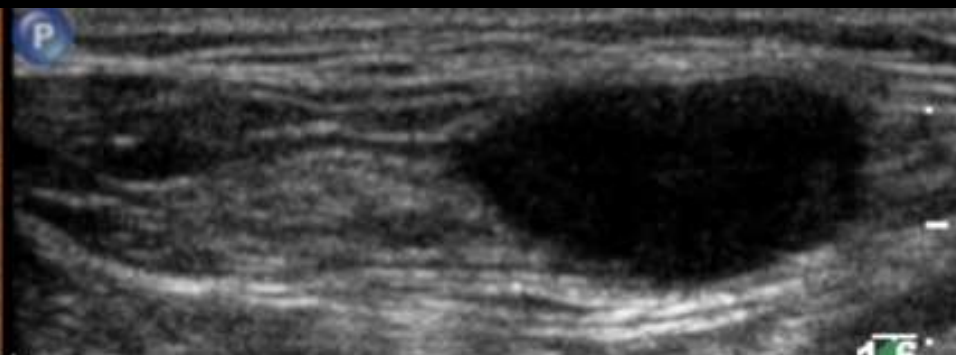
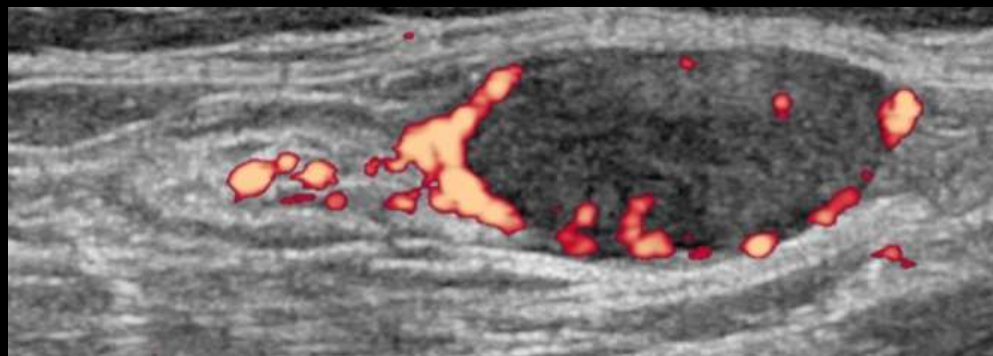
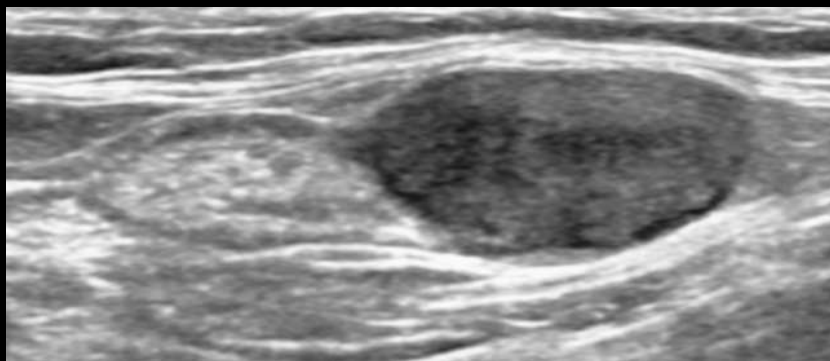
Ca nejasného origa



DLBCL

Fokální kortikální hypertrofie

- Hyperechogenní centrum zachované u maligních uzlin
- Vassallo P, Wernecke K, Roos N, et al. Differentiation of benign from malignant superficial lymphadenopathy: the role of high-resolution US. Radiology 1992;183:215-220.



Metastáza karcinomu uroteliálního origa

Známky nádorové infiltrace

- Snížený LT index
- Fokální kortikální hypertrofie
- Excentrická dislokace hyperechogenního centra
- Absence centrálního typu vaskularizace, **neovaskularizace**
- Přítomnost nekróz, cystických okrsků
- Neostré ohraničení uzliny bez průvodní periadenitidy
- **CEUS** – nehomogenní syčení

	Benigní	Maligní
LT index	> 2	< 2
Echogenita	Hyperechogenní centrum	Hypoechogenní
Ohraničení	Ostré; výjimka u periadenitidy	Neostré u extrakapsulárního šíření nádoru
Nekrózy	<u>Abscedující lymfadenitidy</u> <u>Zoonózy, granulomatózní záněty, TBC</u>	Metastázy solidních nádorů, méně lymfomy
Kalcifikace	Tuberkulóza	Metastázy karcinomů štítné žlázy, po terapii
Vaskularizace	Centrální	Periferní, smíšená
CEUS	Homogenní sycení s centrální tepnou	Nehomogenní sycení Homogenní sycení s absencí centrální tepny

Děkuji za pozornost