Vaskulitis - «Screening»

Abschlusskurs Sektion Gefässe SGUM

Freitag, 26.04.2024

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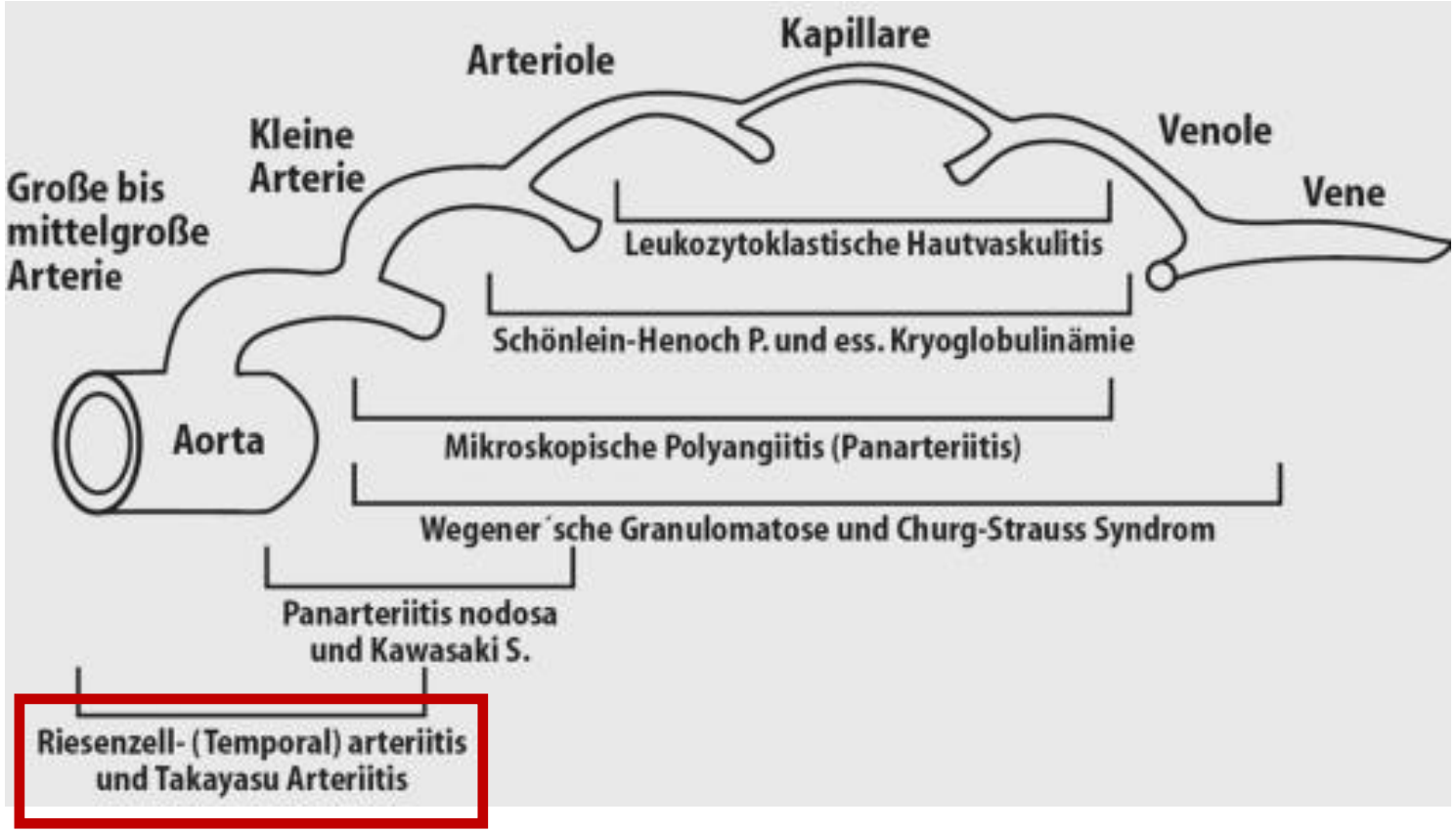
Klassifikation der Vaskulitiden



Riesenzellarteritis/Temporalarteritis = GCA (giant cell arteritis)

Takayasu – Arteritis = TA

2022 ACR/EULAR classification criteria (!) for giant cell arteritis

CONSIDERATIONS WHEN APPLYING THESE CRITERIA

- These classification criteria should be applied to classify the patient as having giant cell arteritis when a diagnosis of medium-vessel or large-vessel vasculitis has been made
- Alternate diagnoses mimicking vasculitis should be excluded prior to applying the criteria

ABSOLUTE REQUIREMENT

Age ≥ 50 years at time of diagnosis	

ADDITIONAL CLINICAL CRITERIA

Morning stiffness in shoulders/neck	+2
Sudden visual loss	+3
Jaw or tongue claudication	+2
New temporal headache	+2
Scalp tenderness	+2
Abnormal examination of the temporal artery[1]	+2

LABORATORY, IMAGING, AND BIOPSY CRITERIA

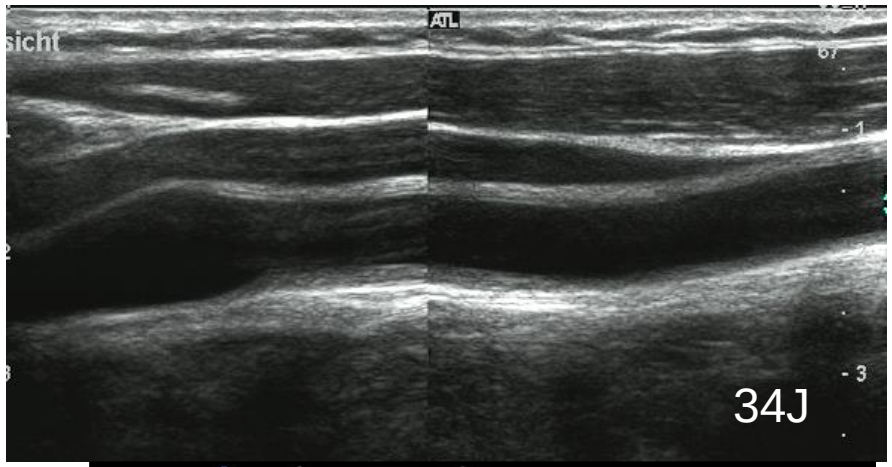
Maximum ESR ≥ 50 mm/hour or maximum CRP ≥ 10 mg/liter[2]	+3
Positive temporal artery biopsy or halo sign on temporal artery ultrasound[3]	+5
Bilateral axillary involvement[4]	+2
FDG-PET activity throughout aorta[5]	+2

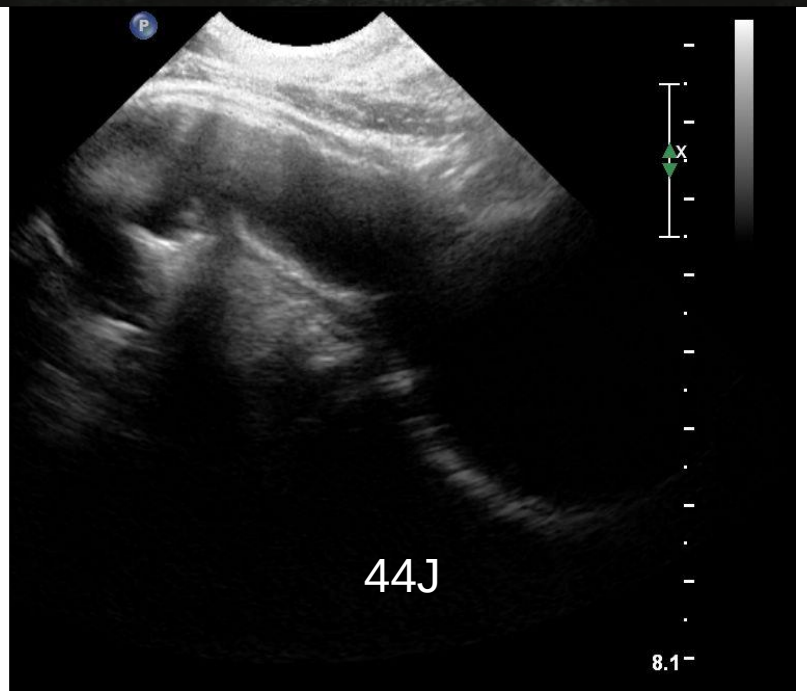
Sum the scores for 10 items, if present. A score of ≥ 6 points is needed for the classification of GIANT CELL ARTERITIS.

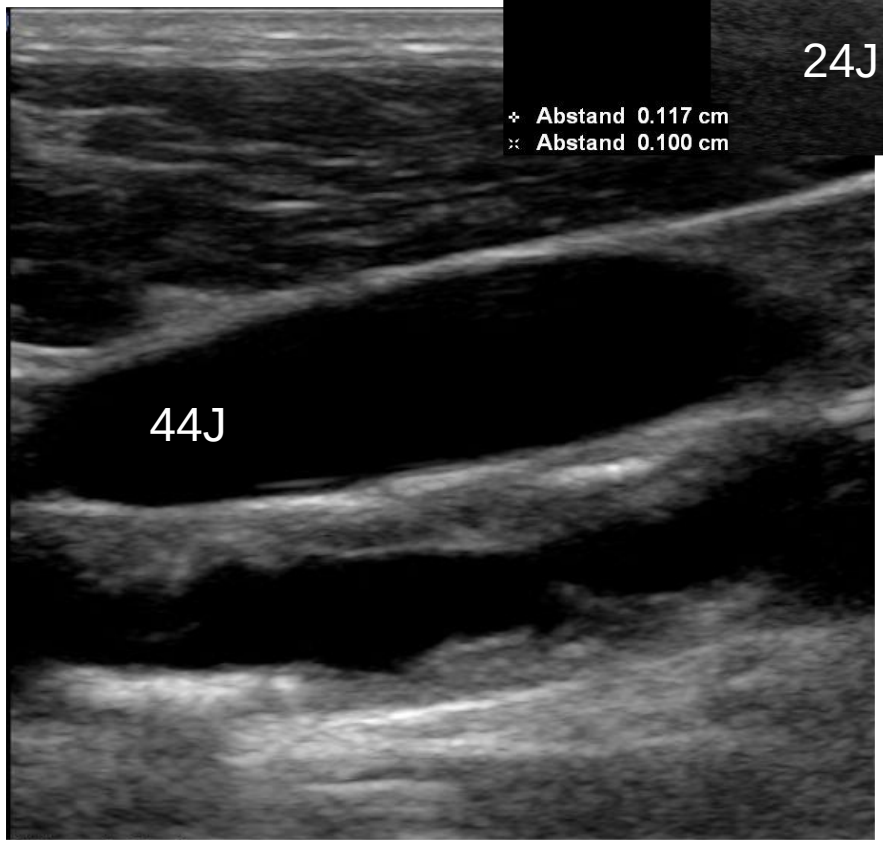
1. Examination of the temporal artery showing absent or diminished pulse, tenderness, or hard 'cord-like' appearance.
2. Maximum erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP) values prior to initiation of treatment for vasculitis.
3. Presence of either definitive vasculitis on temporal artery biopsy or halo sign on temporal artery ultrasound. There are no specific histopathologic criteria to define definitive vasculitis on temporal artery biopsy. Presence of giant cells, mononuclear leukocyte infiltration, and fragmentation of the internal elastic lamina were independently associated with histopathologic interpretation of definite vasculitis in the DCVAS cohort[24]. Halo sign is defined by the presence of an homogenous, hypoechoic wall thickening on ultrasound [25].
4. Bilateral axillary involvement is defined as luminal damage (stenosis, occlusion, or aneurysm) on angiography (computed tomography, magnetic resonance, or catheter-based) or ultrasound, halo sign on ultrasound, or fluorodeoxyglucose uptake on positron emission tomography.
5. Abnormal fluorodeoxyglucose (FDG) uptake in the arterial wall (e.g., greater than liver uptake by visual inspection) throughout the descending thoracic and abdominal aorta on positron emission tomography (PET).

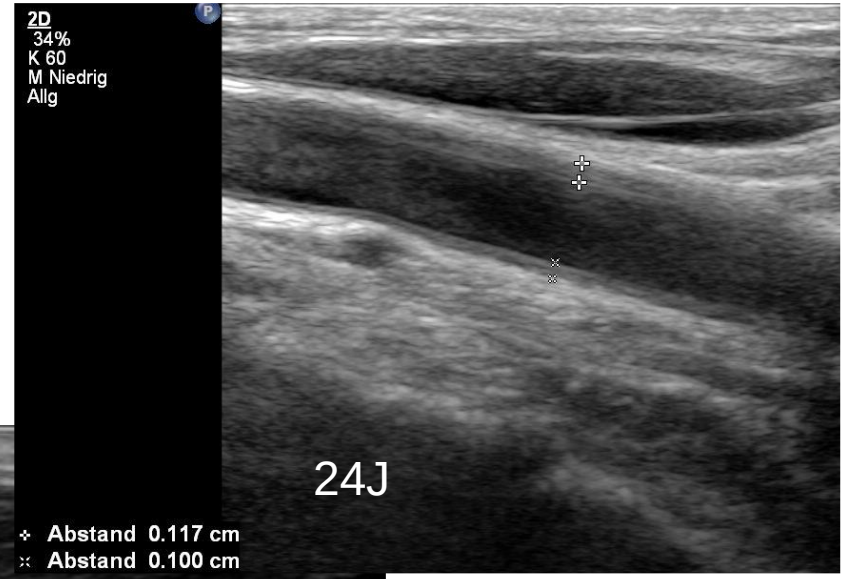
Ponte C, et al. Ann Rheum Dis 2022;81:1647–1653. doi:10.1136/ard-2022-223480

Takayasu - Arteriitis

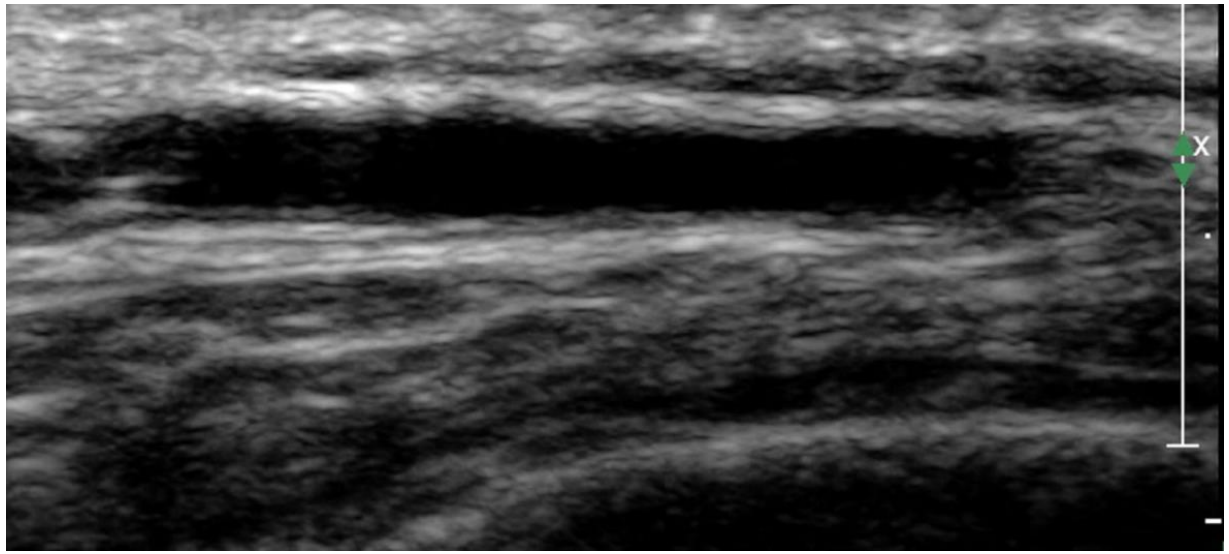


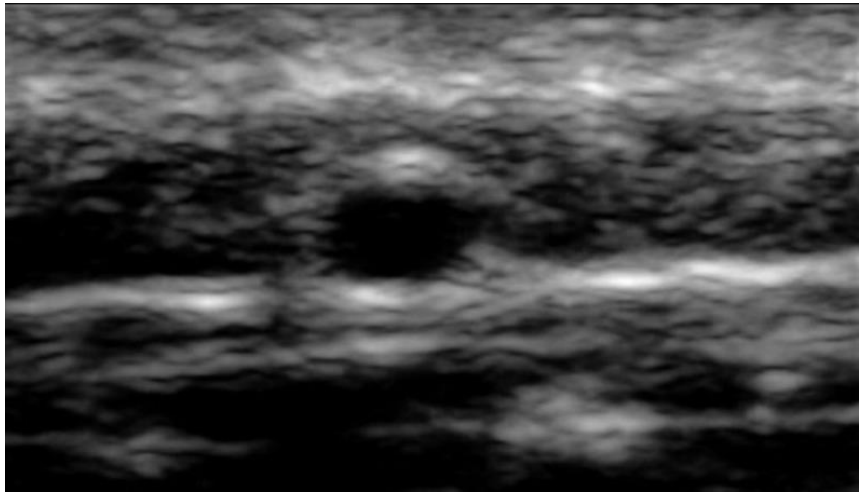


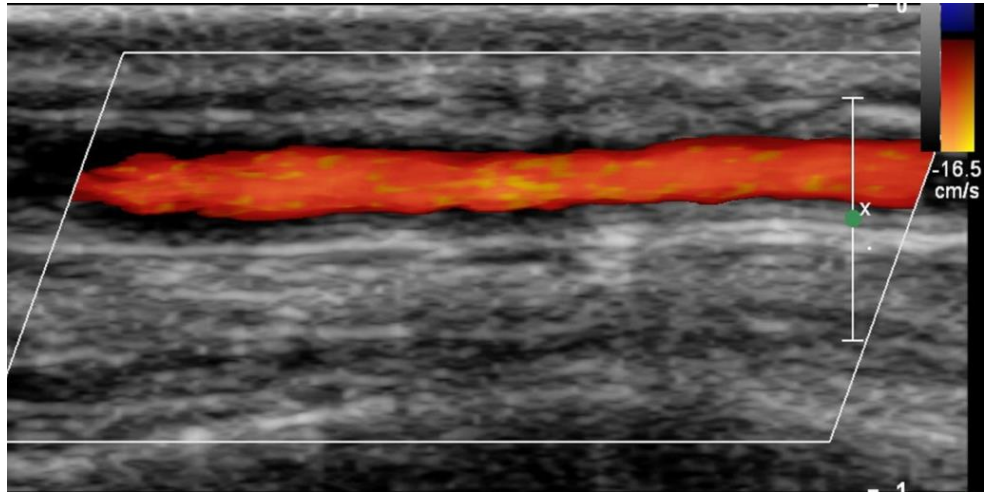




Normalbefund A. temporalis

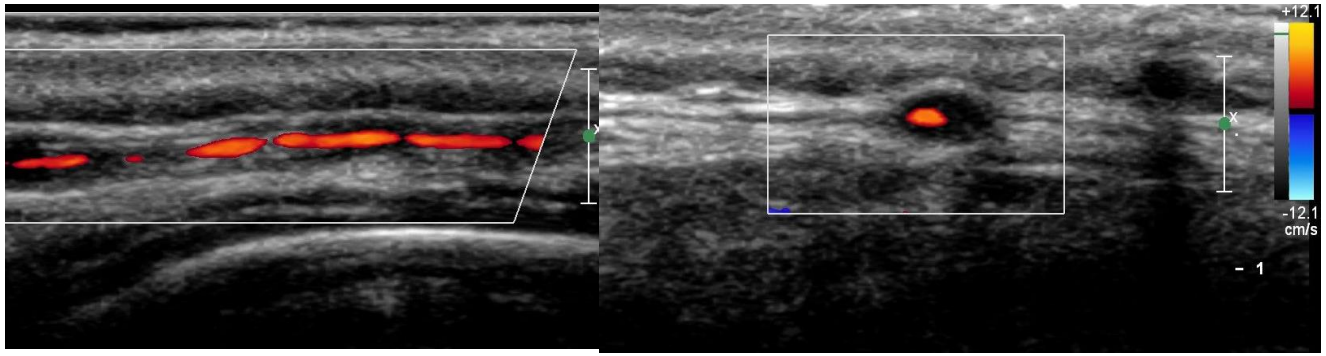




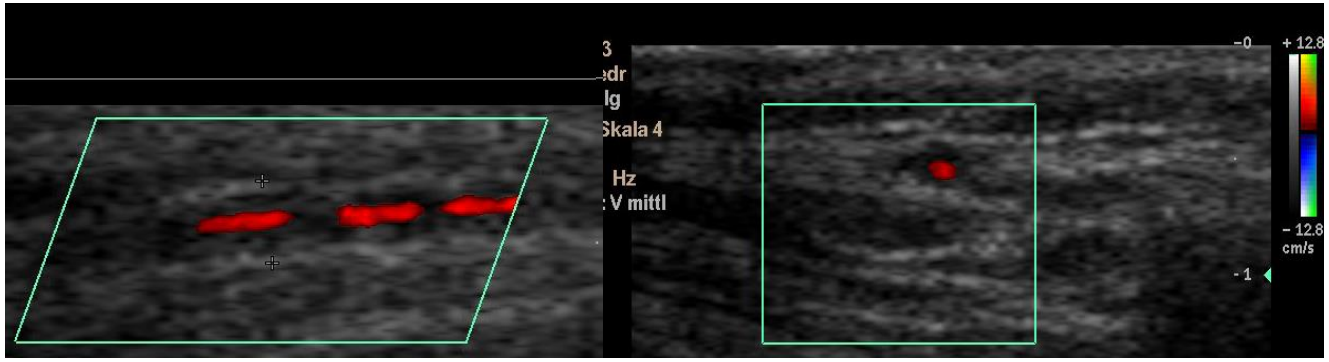


Bestätigte GCA temporal

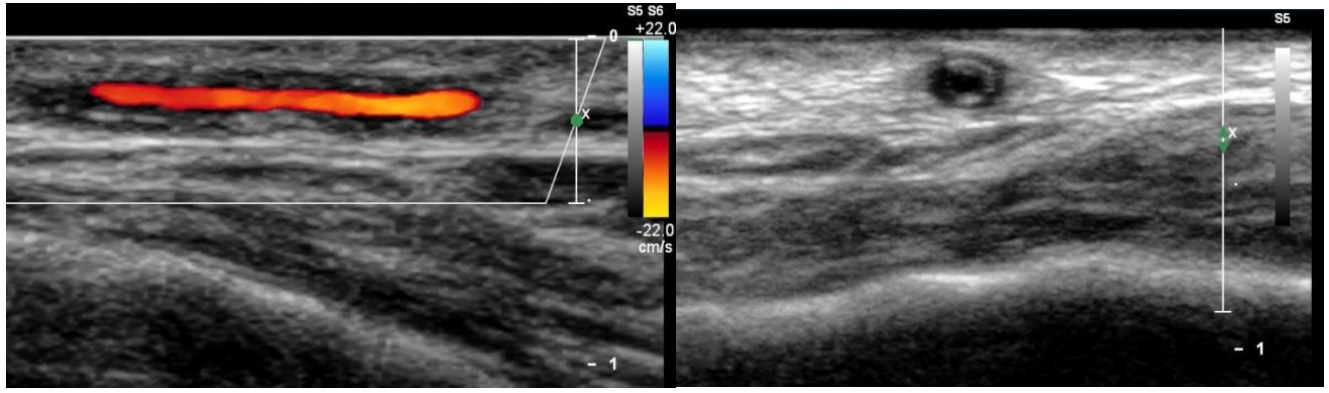
a)



b)



c)



Sonographische Kriterien der Grossgefässvaskulitis

- Diffuse, zirkumferente , rel. echoarme Intima/Mediaverdickung, sog. „macaroni sign“, soll inflammatorisches Oedem, erhöhte Vaskularisation oder beides darstellen.

- Atherosklerotische Läsionen sind normalerweise durch unregelmässige, teils lokalisierte, unterschiedlich echodichte Intima/Mediaveränderungen oder Plaques charakterisiert.

- Atherosklerotische und vaskulitische Läsionen betreffen häufig unterschiedliche Gefässareale (v.a. A. scl./axillaris).

Pignoli P, Circulation 1986; Pignoli P, Atheroscler Rev 1984;Poli A, Atherosclerosis 1988; Maeda H, Ultrasound Med Biol 1991;Salonen JT, Circulation 1993

<1990 - 2010

Sonographische Kriterien der Temporalarteriitis

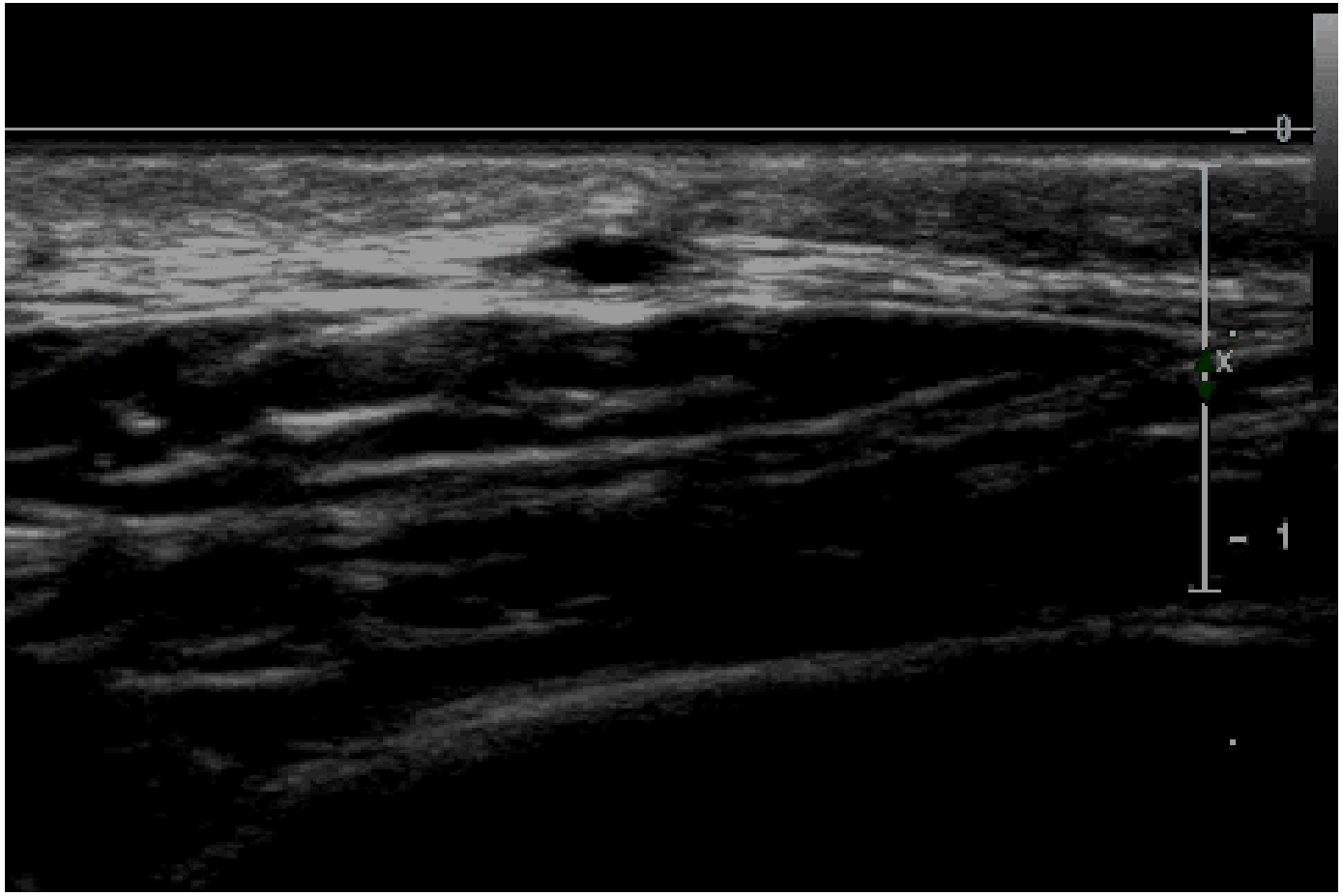
- Dunkle, hypoechogene, zirkumferente Wandverdickung („Halo“)
  mindestens 0.5mm an mindestens 1 Gefässegment (>0.3mm Dicke)*
- (Stenose = Vmax > 2x erhöht, ev. Turbulenzen)
- (Okklusion)

(Technik: > 8 MHz, colour box 20 – 30 Grad, Color – Signal soll ganzes Arterienlumen abdecken)
Untersuch längs **und quer** ☺

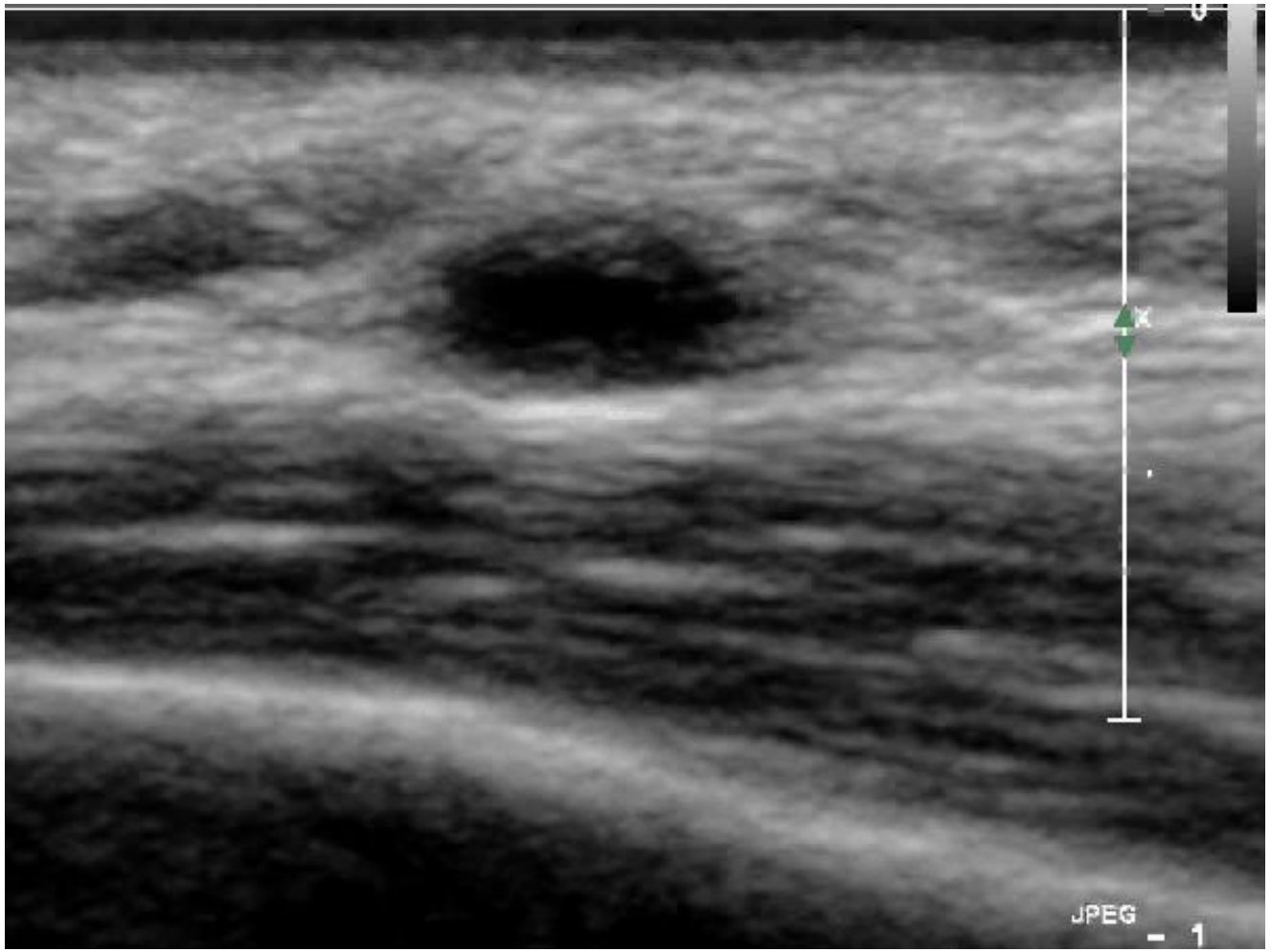
Schmidt WA, NEJM 1997 Nov 6;337(19):1336-42.
Schmidt WA, Blockmans D, Curr Op Rheumatol 2005;17:9
Reinhard M, Schmidt WA, Z Rheumatol 2009;68:108

Ab ca 2010

Kompressionszeichen -



Kompressionszeichen +



Kompression der Temporalarterie

Diagnostic performance of the compression-sign and the halo-sign

80 Patienten, 43 GCA, 37 ohne GCA

	Sensitivity %	Specificity %	Positive predictive value %	Negative predictive value %
ACR criteria as the reference standard (n=80)				
Compression-sign	79.1	100	100	80.4
Halo-sign	79.1	100	100	80.4
Biopsy as the reference standard (n=52)				
Compression-sign	100	68.8	66.6	100
Halo-sign	100	68.8	66.6	100

Aschwanden M, Ultraschall in Med 2013; 34: 47–50

Übereinstimmung Angiologe / Rheumatologe

- Krippendorff ‘s alpha coefficient
  Kα (95%CI) = 0.92 (0.85 – 0.98)

- Spearman Korrelations-Koeffizient Angio / Rheuma
  r_S = 0.96

1/60 unterschiedlich beurteilt (V.a. vs eindeutige Vaskulitis)

6.2 min für Rheumatologen pro Pat. (ohne Dokumentation)

Aschwanden M, Clin Exp Rheumatol 2015;33(2 Suppl 89):113-5

2018

Sonographische Kriterien der Riesenzellarteriitis

RMD Open. 2018; 4(1): e000598.
Published online 2018 May 17. doi: 10.1136/rmdopen-2017-000598
Original article

PMCID: PMC5976098
PMID: 29862043

Definitions and reliability assessment of elementary ultrasound lesions in giant cell arteritis: a study from the OMERACT Large Vessel Vasculitis Ultrasound Working Group

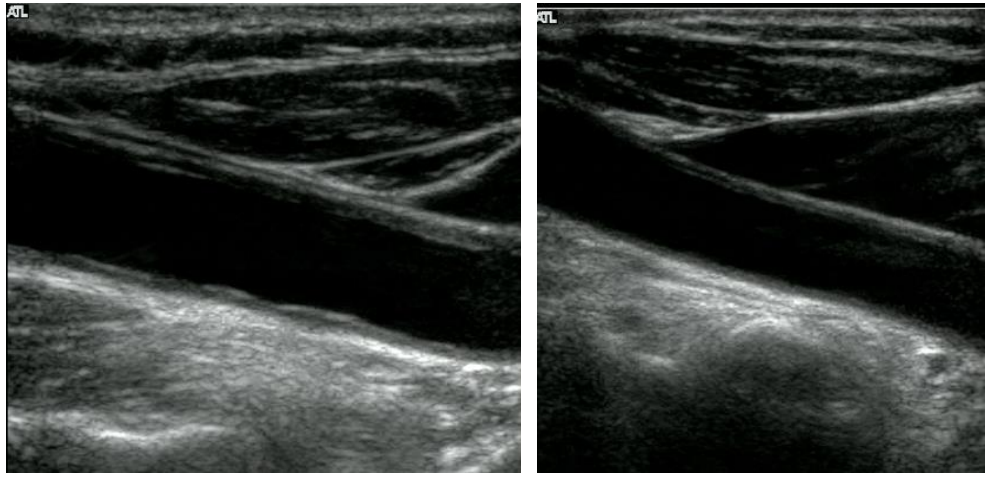
Stavros Chrysidis,[#1] Christina Duftner,[#2] Christian Dejaco,[3,4] Valentin S Schäfer,[5] Sofia Ramiro,[6] Greta Carrara,[7] Carlo Alberto Scirè,[7,8] Alojzija Hocevar,[9] Andreas P Diamantopoulos,[10] Annamaria Iagnocco,[11] Chetan Mukhtyar,[12] Cristina Ponte,[13] Esperanza Naredo,[14] Eugenio De Miguel,[15] George A Bruyn,[16] Kenneth J Warrington,[17] Lene Terslev,[18] Marcin Milchert,[19] Maria Antonietta D'Agostino,[20] Mattew J Koster,[17] Naina Rastalsky,[21] Petra Hanova,[22] Pierluigi Macchioni,[23] Tanaz A Kermani,[24] Tove Lorenzen,[25] Uffe Møller Døhn,[18] Ulrich Fredberg,[25,26] Wolfgang Hartung,[27] Bhaskar Dasgupta,[28] and Wolfgang A Schmidt[29]

Conclusions

The 'halo' and the 'compression' signs are regarded as the most important US abnormalities for GCA. The inter-rater and intra-rater agreement of the new OMERACT definitions for US lesions in GCA was excellent.

Cave: Ultraschall «ambigouus» (verdächtig)

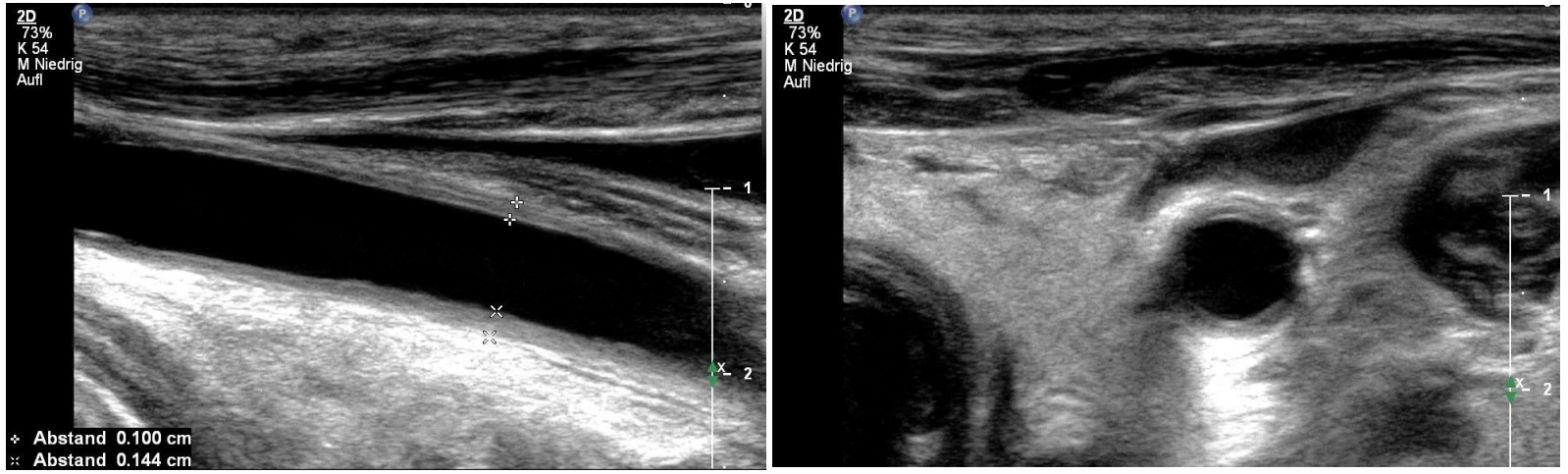
Vaskulitis



u.a. PET pos.

A. carotis communis

Keine Vaskulitis



u.a. PET neg.

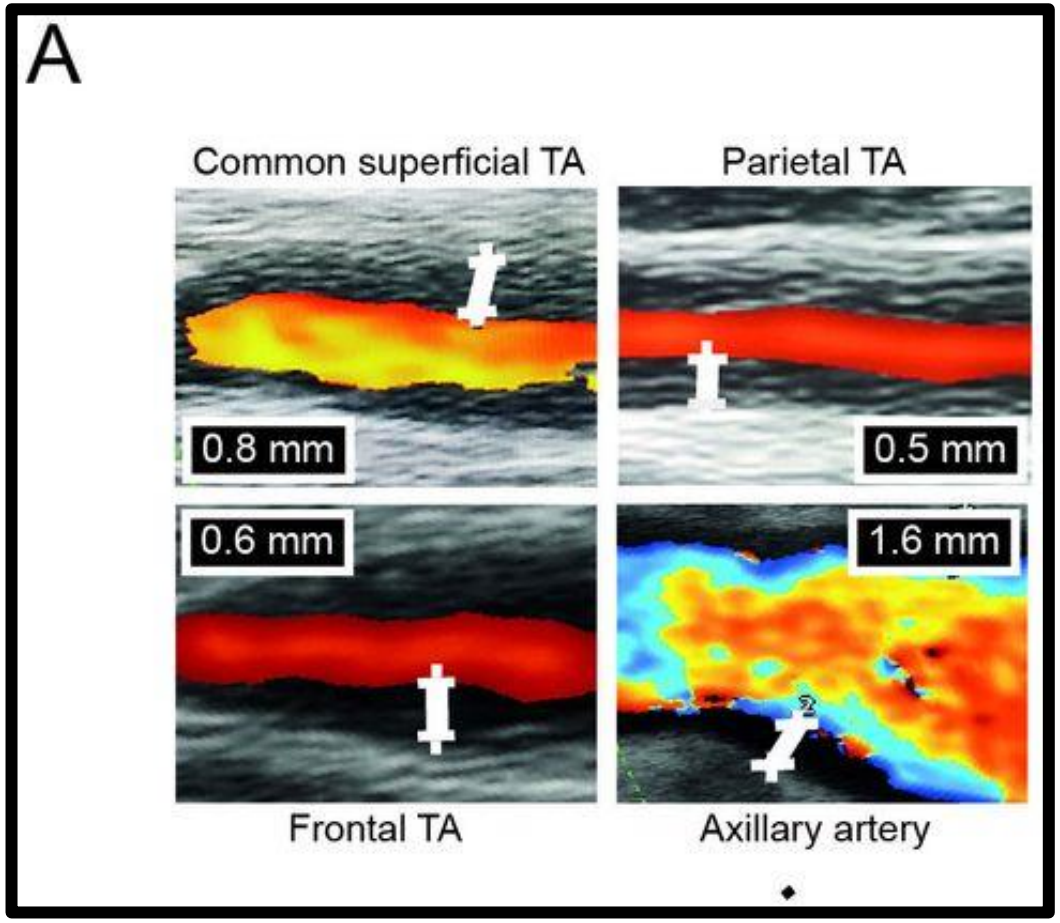
2021

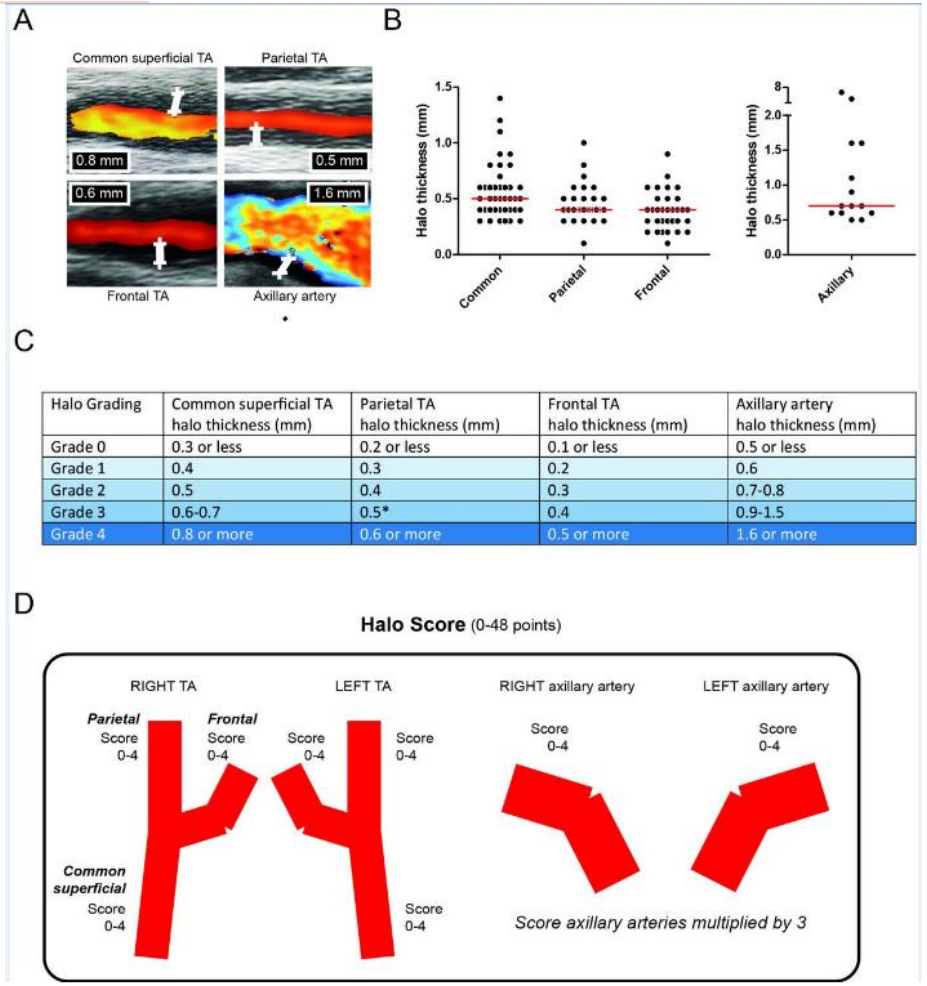
Novel ultrasonographic Halo Score for giant cell arteritis: assessment of diagnostic accuracy and association with ocular ischaemia

Kornelis S M van der Geest [1,2] Frances Borg,[2] Abdul Kayani,[2] Davy Paap,[1,3] Prisca Gondo,[2] Wolfgang Schmidt,[4] Raashid Ahmed Luqmani,[5] Bhaskar Dasgupta [2]

ABSTRACT
Objectives Ultrasound of temporal and axillary arteries

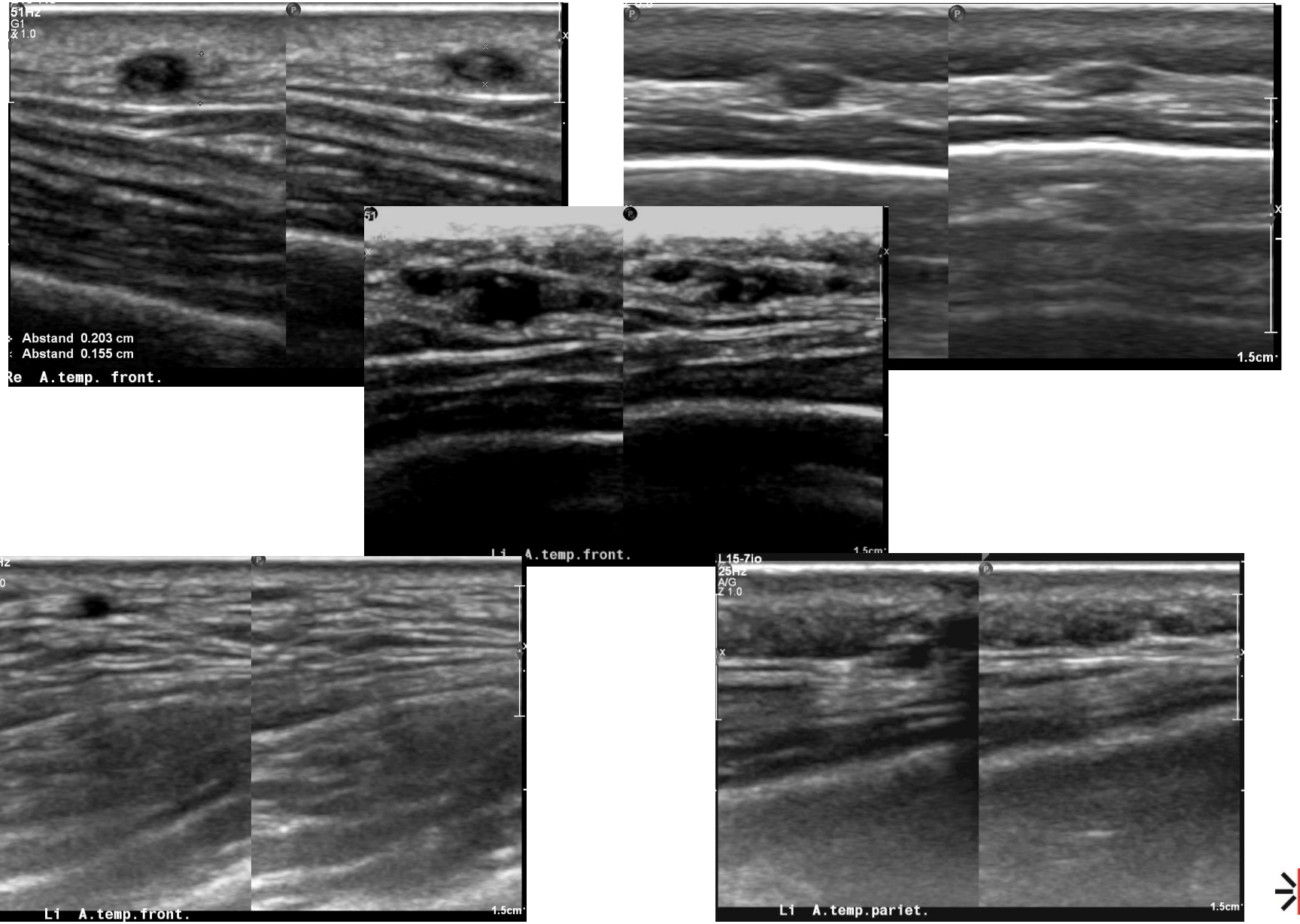
Key messages



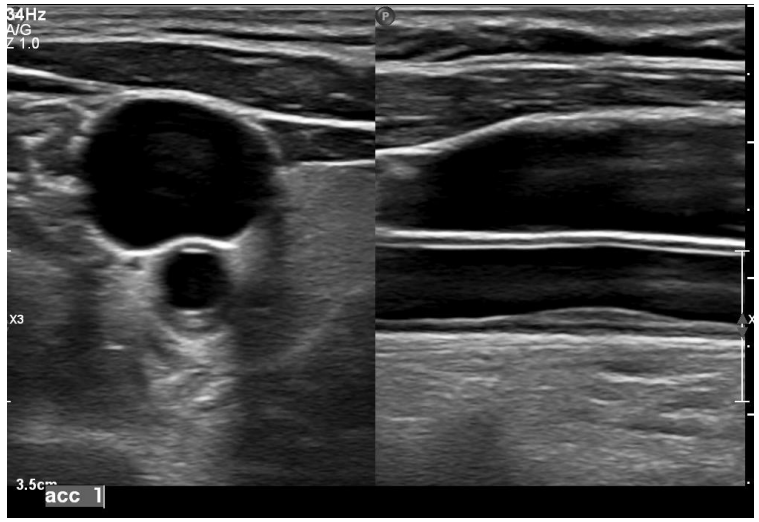


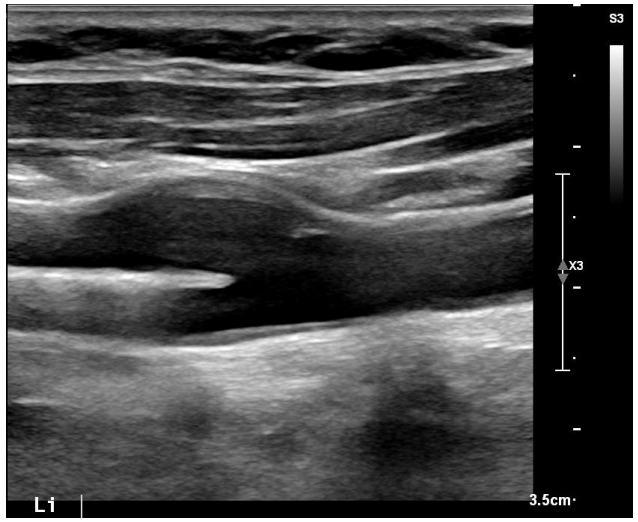
Halo Grading	Common superficial TA halo thickness (mm)	Parietal TA halo thickness (mm)	Frontal TA halo thickness (mm)	Axillary artery halo thickness (mm)
Grade 0	0.3 or less	0.2 or less	0.1 or less	0.5 or less
Grade 1	0.4	0.3	0.2	0.6
Grade 2	0.5	0.4	0.3	0.7-0.8
Grade 3	0.6-0.7	0.5*	0.4	0.9-1.5
Grade 4	0.8 or more	0.6 or more	0.5 or more	1.6 or more

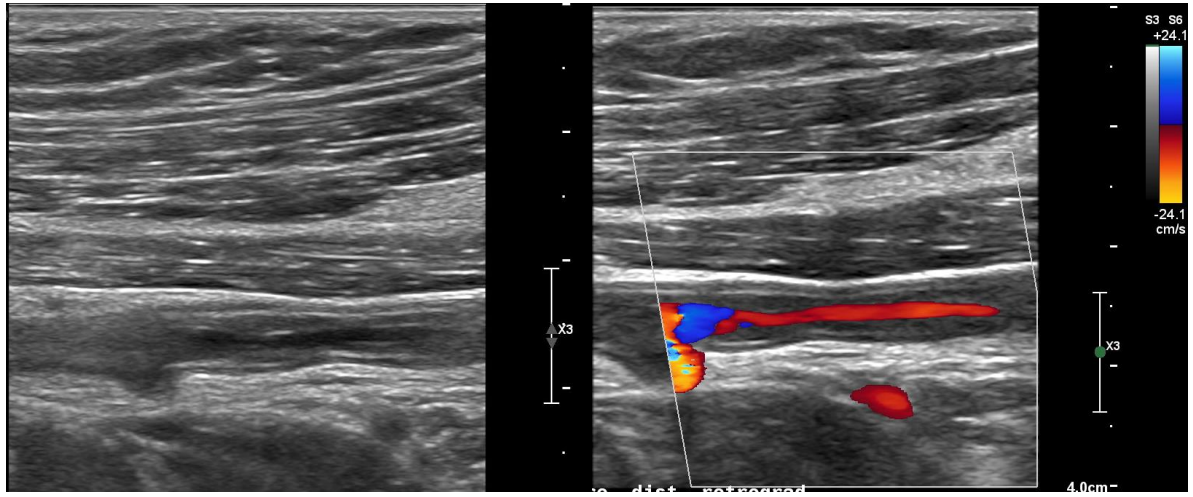
Bildgalerie Temporalarterien

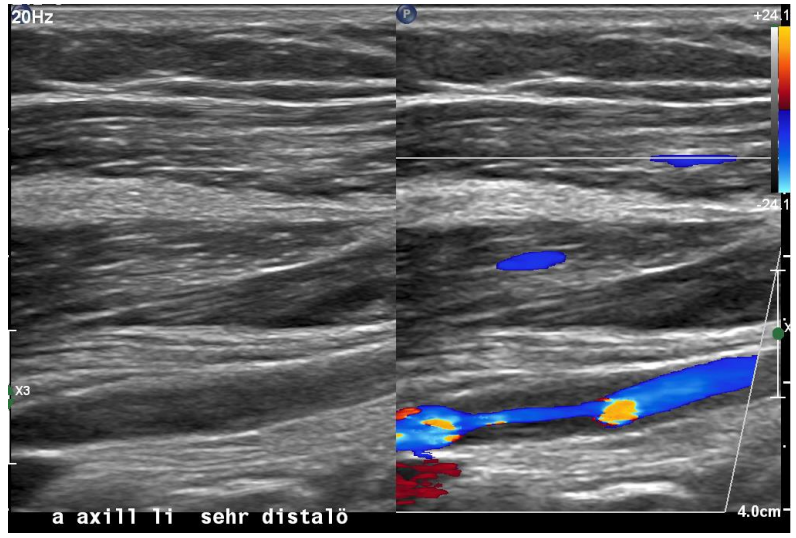


Bildgalerie Arterien extratemporal



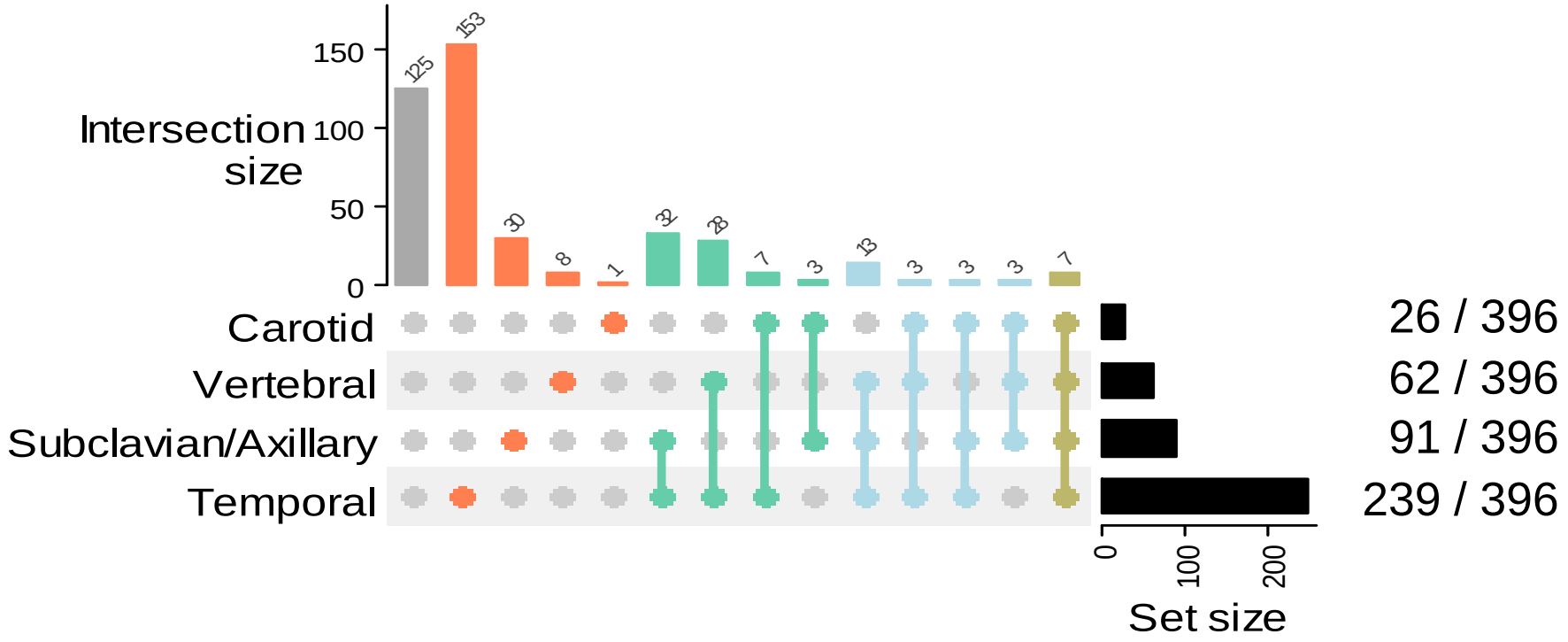






Resultate (präliminär) aus Basel 2023

271 / 396 GCA – Patienten mittels US diagnostiziert (68.5%)



Universitätsspital Basel

Zusammenfassung

- Sonographisch theoretisch und im Einzelfall eindeutig
- Untersuchung im Querschnitt viel wichtiger als üblicherweise
- Häufig grosse Grauzone (wird ev. durch «Quantifizierung» nicht weniger grau)
- Vorsichtige Interpretation (cave: therapeutische Konsequenz!)