Carotid duplex examination - online methods of patient education

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Abstract

The authors present the most important online patient education methods concerning the carotid ultrasound imaging (easy-to-read articles, brochures, patient pages, illustrations, video podcasts, frequently asked questions).

Key words: patient education, websites, carotid artery, duplex ultrasonography

Rezumat

Autorii prezintă cele mai importante metode online de educație a pacienților referitoare la ultrasonografia duplex a arterelor carotide (articole, broșuri, pagini ale pacientului, ilustrații, imagini video, întrebări frecvente).

Cuvinte cheie: educația pacientului, internet, artera carotidă, ultrasonografie duplex

The carotid artery disease represents the narrowing or blockage of one or more of the carotid arteries in patients with or without clinical features.

The American Society of Neuroimaging and the Society of Vascular and Interventional Neurology recommend the screening for asymptomatic carotid artery stenosis (whose prevalence is about 2-18%) in high-risk subjects and in patients with peripheral arterial disease, renal artery stenosis, and abdominal aortic aneurysm [1].

The European Societies of Hypertension and of Cardiology recommend carotid ultrasound imaging as a test for the evaluation of every patient with arterial hypertension because the carotid intima-media thickness (more than 0.9 mm) has a good predictive value for the cardiovascular diseases. More than that, carotid wall thickening or plaque represents important subclinical organ damage in patients with arterial hypertension [2].

For this reason, the general population and the patients with cardiovascular and cerebrovascular diseases must be informed about the most important aspects of the carotid duplex ultrasound (indications, technique, and interpretation of the results). All the questions came from patients need easy-to-understand answers [3-6]:

• What is carotid ultrasound used for?
• How much does the exam cost?
• How do I prepare for the exam?
• Who will perform the exam?
• What happens during the investigation?
• How long does the exam take?
• Is this exam safe?
• Will I need more exams?

There is a wide variety of online providers of patient education resources concerning all aspects of carotid duplex imaging: national institutes [7], university medical...
centers [8], scientific societies [9], hospitals [4-6], patient portals initiated by societies and associations [10], websites offering evidence-based medical information [11], free content encyclopedia [12], and personal websites [13].

Here are some examples of online methods of patient education in the field of carotid ultrasound investigation:

• Easy-to-read articles about carotid ultrasound
• Easy-to-read articles with chapters concerning carotid Doppler examination
• Brochures
• Booklets
• Pamphlets
• Fact Sheets
• Leaflets
• Brief explanations/essential information about carotid duplex
• Medical journals with “Patient Pages”
• Frequently asked questions (FAQs)
• Illustrations
• Video podcasts
• Joining a clinical trial

Easy-to-read articles about carotid ultrasound:

• http://en.wikipedia.org The Free Encyclopedia > Search > Carotid Duplex
• www.brighthub.com/science/medical/articles/33671.aspx Bright Hub. Information on Blood Test Results That Would Trigger Carotid Ultrasound (Lloyd E, April 30, 2009)
• www.nlm.nih.gov/medlineplus National Library of Medicine (NLM) National Institute of Health (NIH) > Medical Encyclopedia > C-Cg > Carotid Duplex
• www.radiologyinfo.org The radiology information resource for patients (developed jointly by the American College of Radiology & The Radiological Society of North America) > Diagnostic Radiology > Procedure or Exam > Ultrasound > Carotid
• www.vascular.co.nz Damien Mosquera, Taranaki Base Hospital, New Plymouth, New Zealand (personal website) > General vascular disease > Assessment of carotid artery disease > Duplex scanning versus angiography in the assessment of carotid artery stenosis

Easy-to-read articles with chapters concerning carotid Doppler examination:

• http://healthlibrary.b Brigham and Women’s Hospital Boston, MA. A Teaching Affiliate of Harvard Medical School > Health Information > Adult Health Library > Cardiovascular Diseases > Vascular Conditions and Diseases > Carotid Artery Disease > How is Carotid Artery Disease diagnosed?
• www.californiaheartclinic.com California Heart & Vascular Clinic San Diego, CA > For Patients > Patient Education Library > Tests > Duplex Ultrasonography
• www.cardiologychannel.com Healthcommunities.com, Inc > Conditions > Stroke > Diagnosis
• www.clevelandclinic.org The Cleveland Clinic, Ohio > Diseases & Conditions > Carotid Artery Disease > How is carotid artery disease diagnosed?
• www.dukeheartcenter.org Duke Medical Center, NC > Patient Education > Patient Education Library > Conditions > Carotid Artery Disease > Diagnosis; or www.dukeheartcenter.org Duke Medical Center, NC > Patient Education > Patient Education Library > Conditions > Stroke > Diagnosis; or www.dukeheartcenter.org Duke Medical Center, NC > Patient Education > Patient Education Library > Tests > Duplex Ultrasonography
• www.empowher.com Women’s Health Online > Media Library > Articles > Browse Procedures A-Z or by category > Arteries and veins > Carotid Artery Endarterectomy
• www.mayoclinic.org The Mayo Foundation for Medical Education and Research > Diseases & Treatments > Find a Disease or Treatment > C > Carotid Artery Disease > Diagnosis > Doppler Ultrasound
• www.medicinenet.com > Diseases & Conditions A-Z list > S > Stroke > How is Stroke Diagnosed > Carotid Doppler Ultrasound
• www.neurosurgerytoday.org The public Website for the American Association of Neurological Surgeons > Patient Outreach > Conditions & Treatments by Subspecialty > Stroke/Related Conditions > Carotid Endarterectomy and Stenosis
• www.umm.edu University of Mariland Medical Center, MD > Medical References > In-Depth Patient Education Reports > Articles > Stroke > Diagnosis
• www.urmc.rochester.edu University of Rochester Medical Center > Quick Links > Health Encyclopedia > Adult Health Encyclopedia > Heart Center > Stroke > Evaluation Procedures for Stroke > Tests That Measure Blood Flow
• www.vascularweb.org Society for Vascular Surgery > Patients and Families > Vascular Conditions, Tests, Treatments > Conditions > Carotid Artery Disease
Brochures:
- www.azheart.com Arizona Heart Institute Phoenix, AZ
  > Select a brochure > Carotid Artery Disease and Stroke
  > Diagnosis of Cerebrovascular Disease
- www.patienteducationcenter.com or www.patientedu.
  org Pri-Med Patient Education Center (a consumer
  health information service created by Harvard Medi-
  cal School, distributed in collaboration with the Medi-
  cal Group Management Association) > Pri-Med Health
  Brochures > Stroke > Diagnosing a Stroke > Imaging
  and Blood-Flow Studies > Doppler Ultrasound

Booklets:
- www.sign.ac.uk Scottish Intercollegiate Guidelines
  Network (SIGN), Edinburgh (Scotland) > Patient In-
  volvement > Patient Network > Stroke assessment.
  Booklet for patients > What tests may I have?

Pamphlets:
- www.aium.org American Institute of Ultrasound in
  Medicine > Store > Patient Pamphlets > Doppler Ultra-
  sound Patient Pamphlet
- www.svunet.org Society for Vascular Ultrasound > Pub-
  lications & Products > Patient Education Guidelines >
  Cerebrovascular Disease

Fact Sheets:
- www.med.nyu.edu New York University Langone
  Medical Center > Diseases & Conditions Information
  > Tests & Procedures A-Z > Procedure & Surgery Fact
  Sheets > C > Carotid Artery Endarterectomy > What to
  Expect > Prior to Procedure > Ultrasound or www.med.
  nyu.edu New York University Langone Medical Center
  > Diseases & Conditions Information > Tests & Pro-
  cedures A-Z > D > Doppler Ultrasound > Parts of the
  Body involved

Leaflets:
- www.patient.co.uk > Information Leaflets > Heart/
  Blood Vessels Category > Stroke > Are any tests needed?

Brief explanations/Essential information about
carotid duplex:
- www.abilenecardiology.com Cardiology Consultants,
  Abilene Heart & Vascular Institute, Abilene, TX > Re-
  sources > Tests & Procedures > Carotid Duplex Scans
- www.asecho.org The American Society of Echocardi-
  ography > See My Heart > Circulation Ultrasound >
  What is Carotid Ultrasound
- www.geneseевascularlab.com Genese Vascular Lab,
  Inc. Rochester, NY (company providing preventive
  health screenings) > Diagnostic Exams > Carotid > Ca-
  rotid Duplex Scan
- www.healthscout.com The Health Scout Network >
  Health Encyclopedia > Test > C > Carotid Duplex
- www.hopkinsmedicine.org Johns Hopkins Medicine >
  Johns Hopkins Heart & Vascular Institute > Conditions
  & Treatments > Treatments/Procedures > Carotid Ul-
  trasound
- www.icavl.org Intersocietal Comission for the Accred-
  itation of Vascular Laboratories > ICAVL news > Pa-
  tient Information > Types of Vascular Exams > Carotid
  Duplex
- www.loyolauniversity.adam.com Loyola Medicine
  Maywood, IL > Health Guide > Health Encyclopedia >
  C > Carotid Duplex
- www.medhelp.org > Health Topics > Tags > D > Ca-
  rotid Duplex
- www.ohsu.edu Oregon Health & Science University
  (OHSU), OR > Healthcare > Health Information >
  Heart Care > Carotid Artery Duplex Scan
- www.ucsfhealth.org University of California San Fran-
  cisco (UCSF) Medical Center, CA > Health Library >
  Medical Tests > C > Carotid Duplex
- www.vascularweb.org Society for Vascular Surgery
  > Patients and Families > Vascular Conditions, Tests,
  Treatments > Tests > Duplex Ultrasound > Carotid Oc-
  clusive Disease

Medical journals with “Patient Pages”:
- www.circ.ahajournals.org Circulation > Circulation Ar-
  chives > Browse by Special Section > Special Sections
  > Cardiology Pacient Page: Sobieszczynk P, Beckman
  J. Carotid Artery Disease, Circulation 2006; 114: e244
  – e247; Yesenko SL, Whitelaw SM, Gornik HL. Testing
  in the Noninvasive Vascular Laboratory, Circulation
  2007; 115: e624 – e626.

Frequently asked questions:
- www.asecho.org The American Society of Echocardi-
  ography > See My Heart > Ultrasound FAQ’s > Fre-
  quently Asked Questions about Circulation Ultrasound
  (Vascular Ultrasound)

Illustrations:
- www.patienteducationcenter.com or www.patientedu.
  org Pri-Med Patient Education Center (a consumer
  health information service created by Harvard Medical
  School, distributed in collaboration with the Medical
The final objectives of all these online methods of patient education are to create a strong patient-physician relationship and to improve the patient compliance.

References

3. www.aium.org American Institute of Ultrasound in Medicine > Patients > About your ultrasound exam
4. www.jupitermed.com Jupiter Medical Center, Jupiter, FL > Advanced Imaging Services > Ultrasound
5. www.vaheart.org Virginia Heart & Vascular Institute, Richmond VA > Patient Education > Tests > Vascular Articles > Duplex Ultrasound
6. www.massgeneral.org Massachusetts General Hospital, Boston, MA > Centers & Services > Clinical Departments > Radiology > Imaging Services > Ultrasound > Brochure-Patient Guide Ultrasound Scan
8. www.urmc.rochester.edu University of Rochester Medical Center
10. www.radiologyinfo.org The radiology information resource for patients of the Radiological Society of North America
11. www.patient.co.uk
13. www.vascular.co.nz