

CCSVI: EVIDENCE FROM JORDANIAN EXPERIENCE



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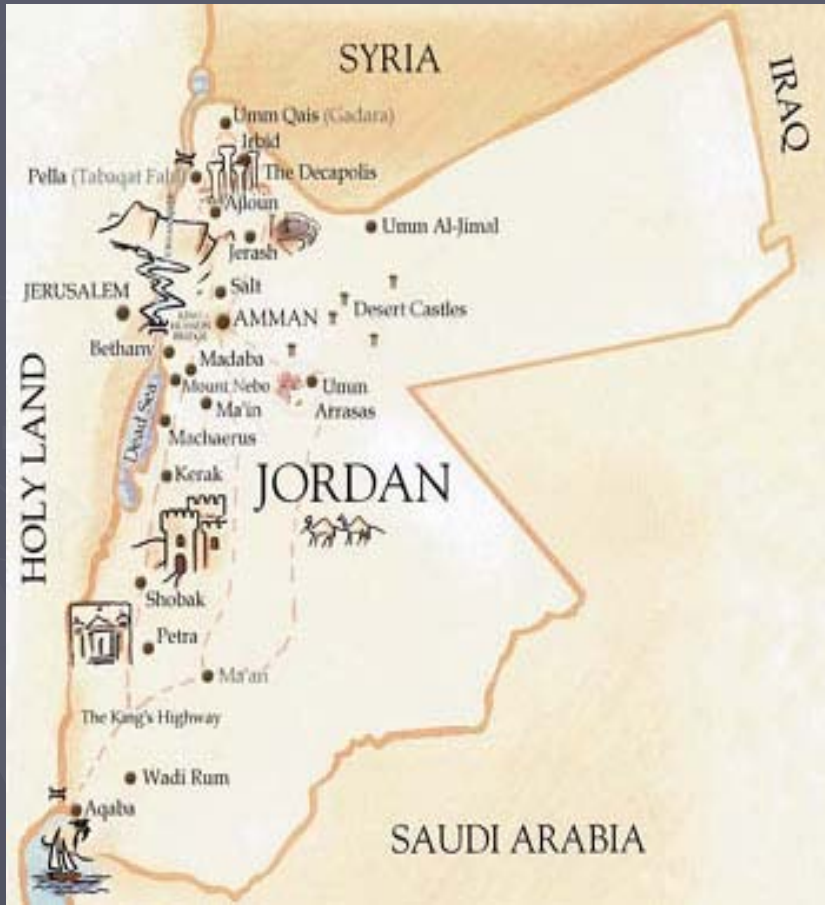
Mediterranean
Sea

Egypt

Suez Canal

Jordan

Demographics



- ▶ Jordanian population 6,000,000.
- ▶ 3000 patients are diagnosed with MS in Jordan.
- ▶ The prevalence is 39/100,000.
- ▶ Two thirds of the patients are females.
- ▶ Annual cost per patient 8,500-12,500 USD, paid by the government.

CCSVI Screening Study

- ▶ 20 MS patients, 20 controls (IBR approval).
- ▶ Doppler sonography of the IJV (according to Zamboni et al protocol*).
- ▶ Few venograms and venoplasty “liberation procedure” (clinical service).

*P Zamboni et al. The Value of Cerebral Doppler Venous Haemodynamics in the Assessment of Multiple Sclerosis. *Journal of the Neurological Sciences* 2009;280: 2009; 21-27

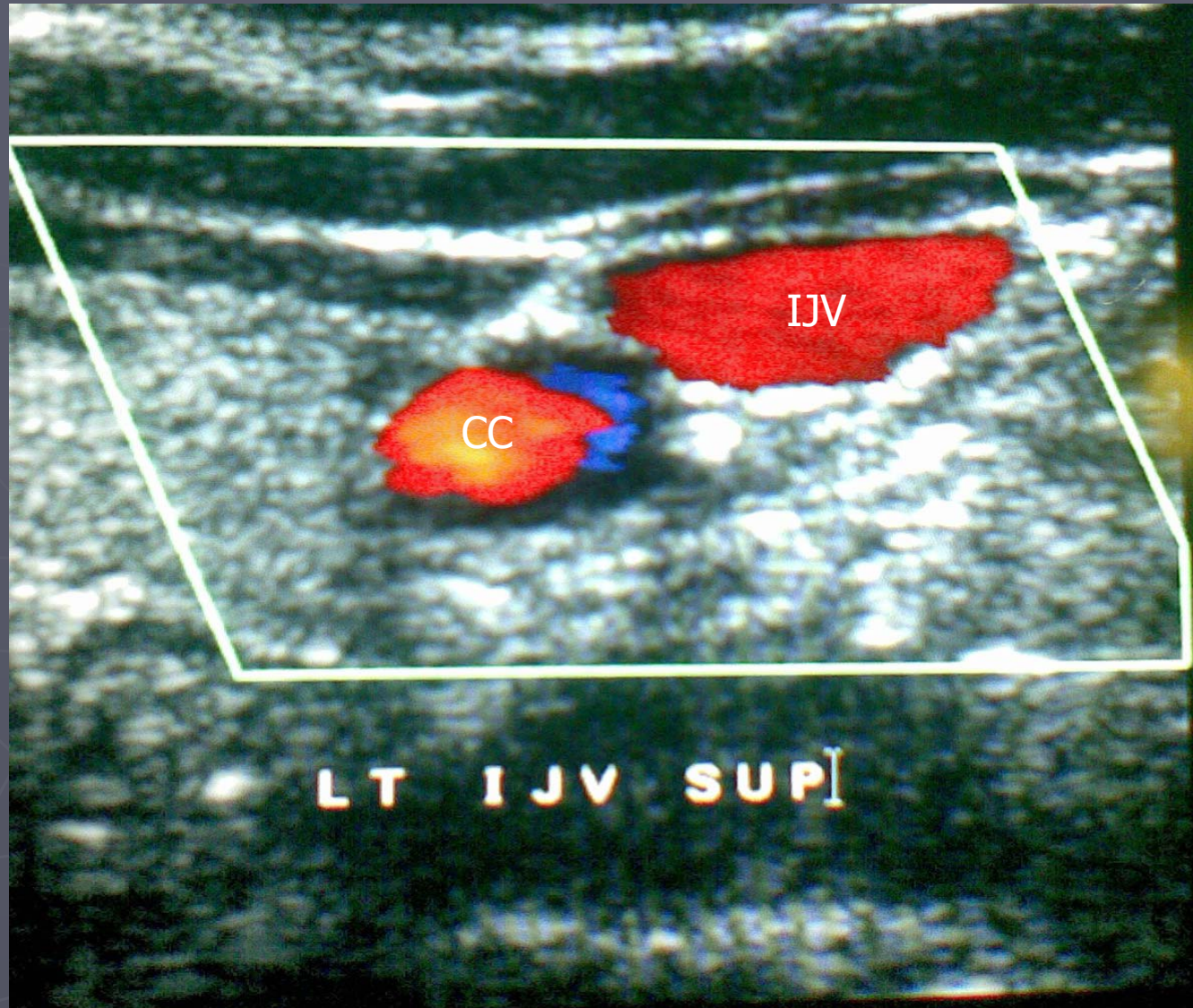


KING ABDULLAH UNIVERSITY
HOSPITAL

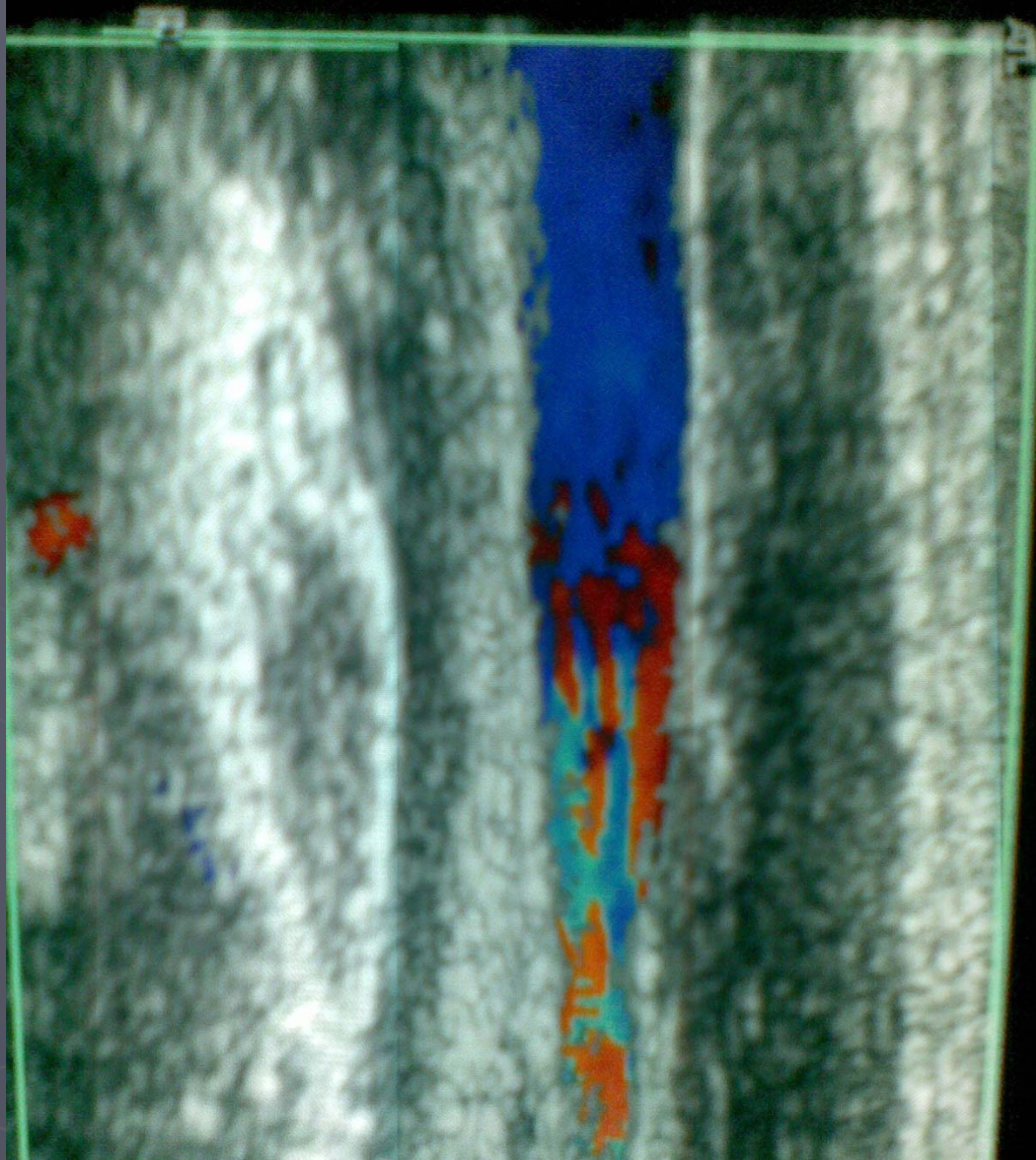


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AND TECHNOLOGY

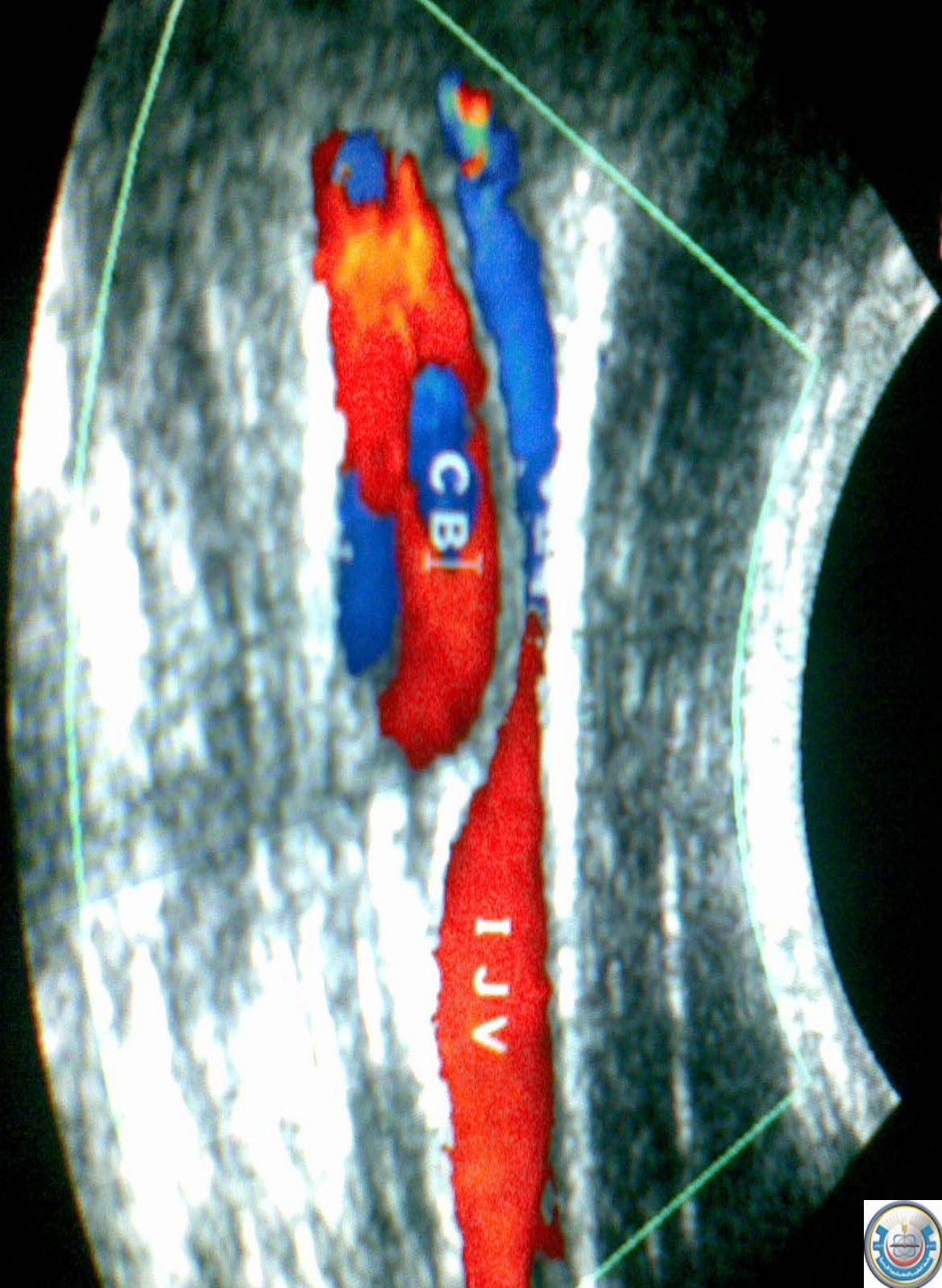
► Reflux in left Internal jugular vein.



- ▶ Mixed flow in the proximal IJV, normal flow in the distal part (regurgitation).

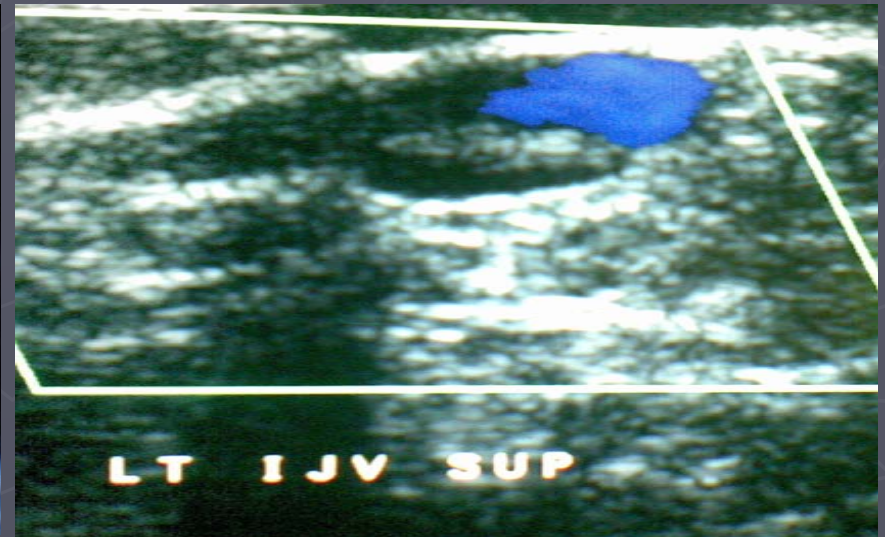
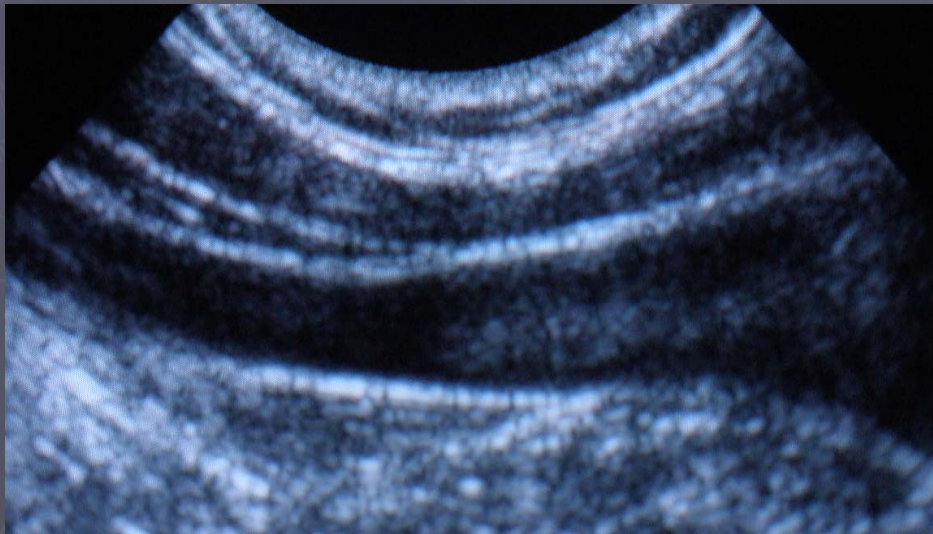


- ▶ Ectatic carotid bulb indenting the IJV causing narrowing with abnormal flow.





- Echogenic flaps/membranes within the internal jugular veins in several patients.
- This finding was more common on the left side.



KHALID MOH.D GHARAYBEHVEM
01-01-1974 M
AN10/39/19615
13-01-2010

K.A.U.H. J.U.S.T IRBID-JORDAN
MAMOUN OMARI



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K.A.U.H. J.U.S.T IRBID-JORDAN
MAMOUN OMARI



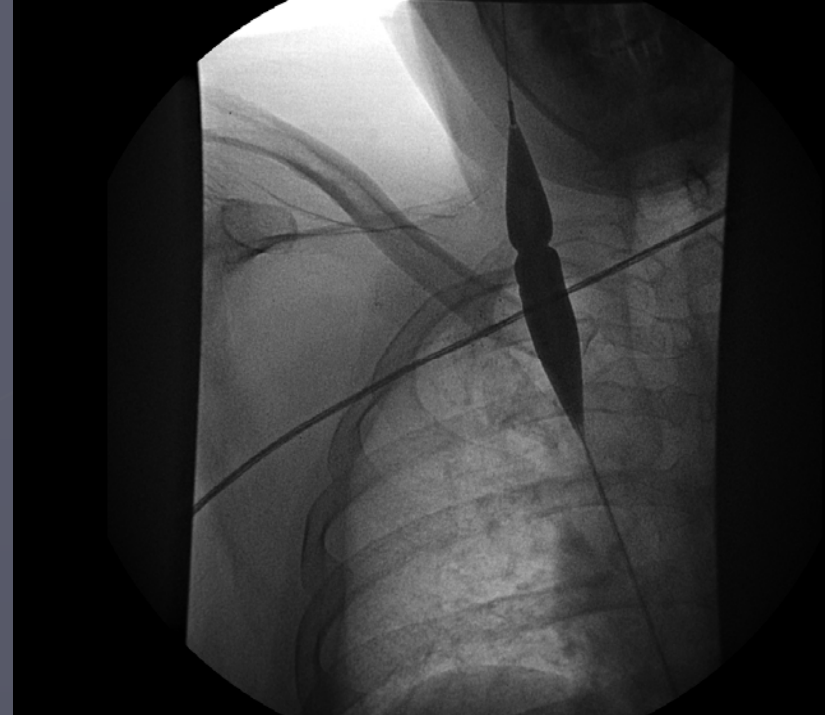
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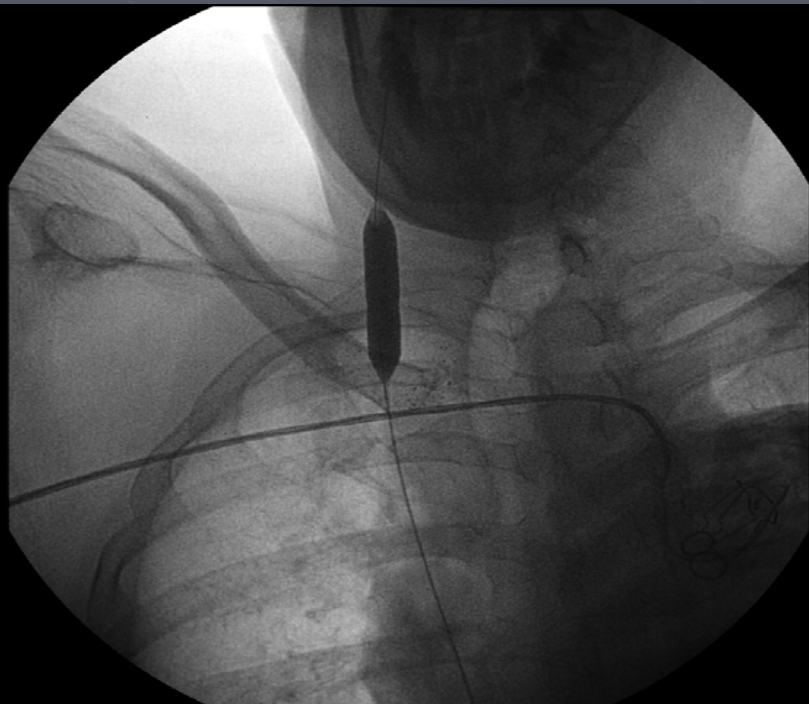


Serial images from a video demonstrating reflux of contrast in the left IJV for ≈ 90 seconds.





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KAMEL MAHMOD HMAIDAN-@
01-01-1961 M
AN10/23-165785
07-01-2010

K.A.U.R. J.U.S.T IRBID-JORDAN
MAMOUN OMARI



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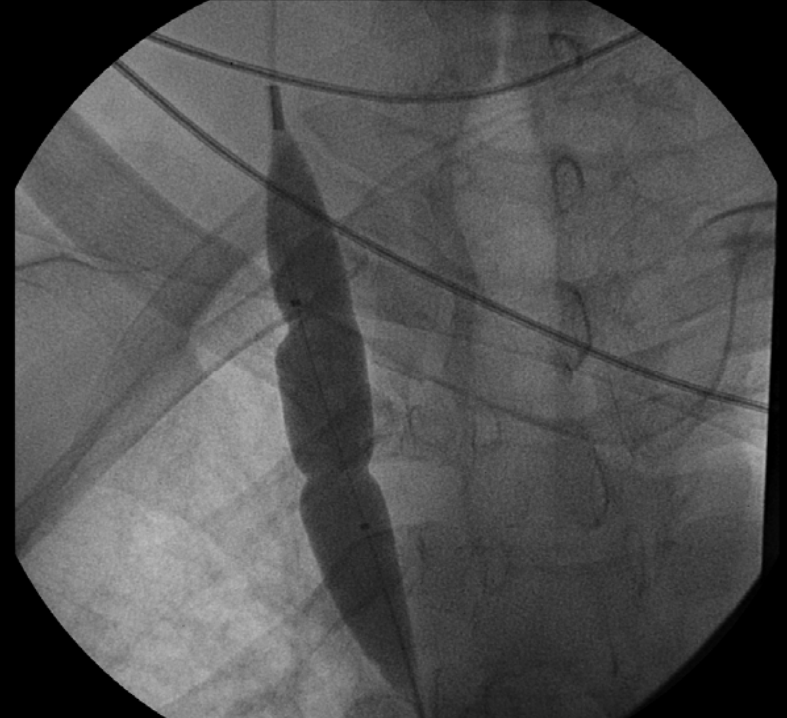
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ABDULLAH ABDELAGDER -VENO
01-01-1974 M
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K.A.U.A. J.U.S.T IRBID-JORDAN
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ABDULLAH ABDELAGDER -VENO
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MAMOUN OMARI



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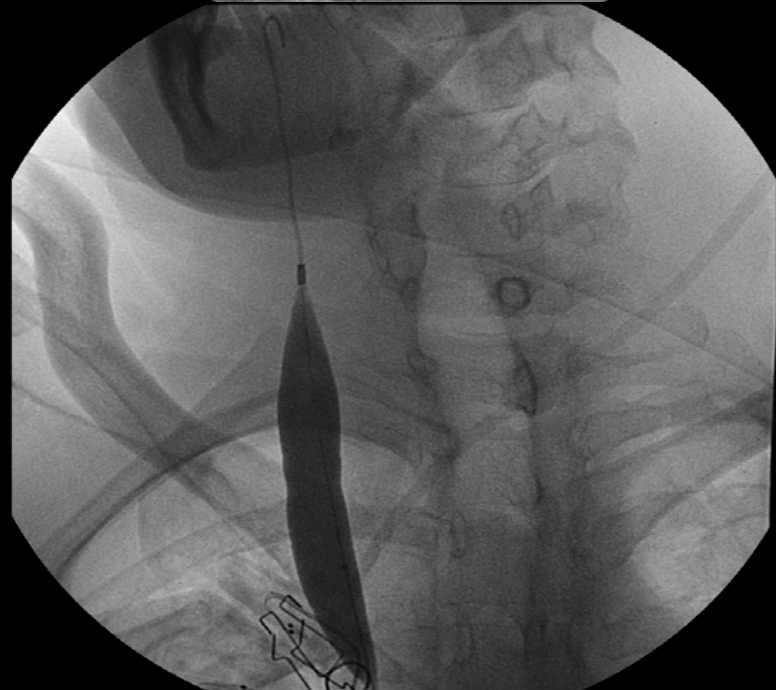
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STENOSIS
PRE PLASTY

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STENOSIS
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KHALID MOH.D GHARAYBEH-VEH
01-01-1974 M
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13-01-2010

K.A.U.H. J.U.S.T IRBID-JORDAN
MAMOUN OMARI

T-mask:
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13:50:55



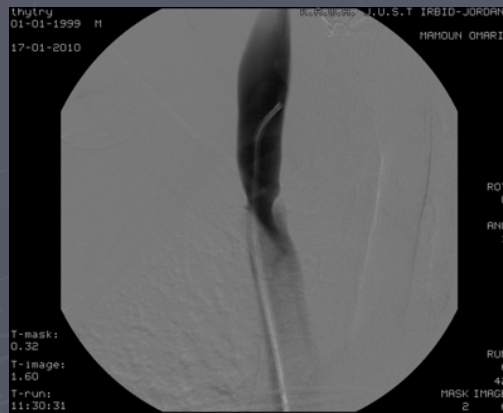
MAS

Jugular Achalasia Sign

Angiogram of right IJV showing stenosis.



Contrast swallow study showing esophageal achalasia.



Patient Improvement Following Angioplasty (in varying degrees).

- ▶ Face colour.
- ▶ Decrease fatigability.
- ▶ Sphincter control (bladder and anal).
- ▶ Motor and sensory function.
- ▶ Visual acuity.
- ▶ Memory.
- ▶ Swallowing act.
- ▶ Speech.
- ▶ Sexual function.



THE BIG QUESTION??

IS

MULTIPLE
SCLEROSIS

RATHER A PRIMARILY

MULTIPLE
STENOSES

!!??

