

Disectia de aorta?
Pana unde

PREZENTARE DE CAZ

B.D, 44 ani, sex M, mediul urban

Data internarii -24.06.2013 ora 11

Motivele internarii:

- TA=280/140mmHg
- lombalgii intense
- dureri abdominale localizate in flancul si fosa iliaca stanga cu iradiere in membrul inferior stang, insotite de parestezii la nivelul membrului inferior stang
- transpiratii profuze
- simptomatologie debutata cu 5 ore inaintea prezentarii la spital

PREZENTARE DE CAZ

Antecedente personale patologice:

HTA gradul III

Displidemie

Conditii de viata si de munca: sofer de tir

Comportamente: fumator 1pachet/zi, nu consuma alcool

Medicatie de fond: afirmativ pacientul a urmat tratament antihipertensiv (metoprolol 100mg/zi, perindopril 10mg/zi, indapamid 1.5mg/zi, lercanidipina 20mg/zi) intrerupt din proprie initiativa de 2 luni

ISTORICUL BOLII

- Pacient in varsta de 44 ani, cu multipli factori de risc cardiovasculari (sex masculin, fumator, HTA, dislipidemie, obezitate) cu HTA gradul 3, fara tratament antihipertensiv de 2 luni, se prezinta de urgenta in Clinica Medicala acuzand lombalgii intense, dureri abdominale localizate in flancul si fosa iliaca stanga, transpiratii profuze, simptomatologie debutata cu 5 ore inaintea prezentarii la spital. Afirmativ lombalgiile au aparut initial in urma cu 2 saptamani in urma unei sarituri de la ~1m inaltime.

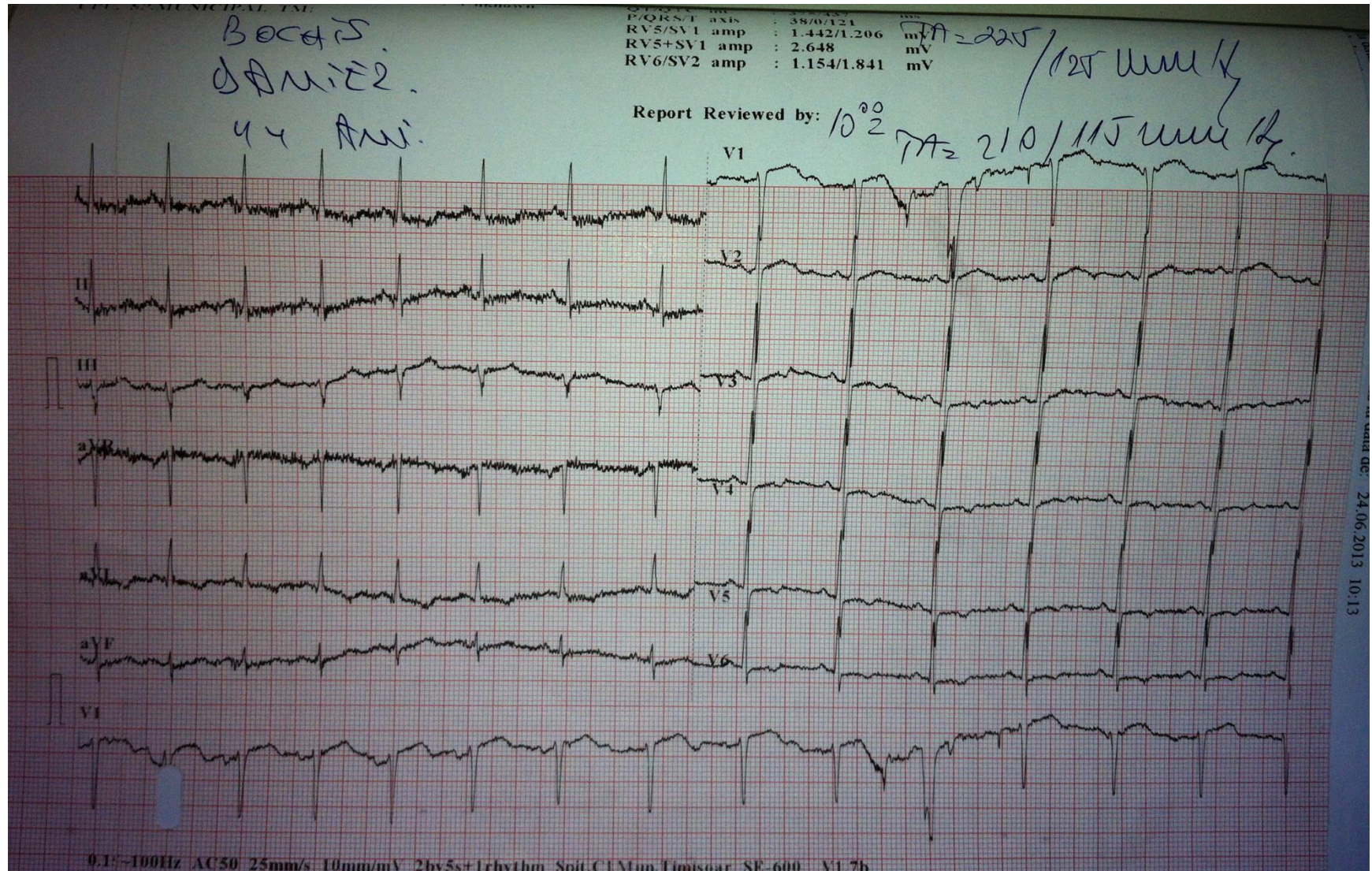
EXAMEN OBIECTIV LA INTERNARE

- Stare generala influentata
- Obezitate androida gradul III (IMC=41.8kg/m²)
- Facies congestiv
- Tegumente umede, tulburari trofice la nivelul membrelor inferioare bilateral
- Torace emfizematos, raluri subcrepitante bazal bilateral
- Zgomote cardiace ritmice, FC= 80batai/minut, TA=280/140mmHg, puls prezent la arterele periferice bilateral
- Abdomen destins de volum prin panicul adipos, dureros la palpare in flancul si fosa iliaca stanga, echimoze paraombilical stang si in fosa iliaca stanga
- Hematurie macroscopica

TABLOU BIOLOGIC

- $H=5.20 \times 10^6/\text{mm}^3$
- $VEM=95.6\text{fL}$
- $HEM=32.9\text{ pg}$
- $CHEM=34.1\text{g/dl}$
- $Hb=17.1\text{ g/dl}$
- $Ht=50\%$
- $L=17500/\text{mm}^3$
 - $Ly=20.1\%$
 - $Mo=3.7\%$
 - $Gr=76.2\%$
- $Tr=170000/\text{mm}^3$
- $INR=0.99$
- $Fibrinogen=4.3\text{g/l}$
- $G=129\text{ mg/dl}$
- $Uree=38\text{ mg/dl}$
- $Cr=1.5\text{mg/dl}$
- $RFG=54\text{ ml/min}$
- $Na=141\text{mmol/l}$
- $K=3.3\text{ mmol/l}$
- $ALAT=42\text{U/l}$
- $ASAT=23\text{U/l}$
- $CK-MB=27\text{U/l}$
- Examen urina: **Pro++**,
Hematii 20.cp

EKG LA INTERNARE



RADIOGRAFIE TORACE

- Cardiomegalie moderata, pedicul vascular largit, hiluri pulmonare accentuate cu aspect de usoara staza pulmonara



Diagnostic posibil

- Colica renala stanga
 - Litiaza renala stanga
 - Necroza papilara
- Tromboza de vena renala
- Lombosciatica
- Infarct mezenteric
- Boala Crohn/diverticulita

RADIOGRAFIE COLOANA LOMBO-SACRATA FATA SI PROFIL

- Pensari discale posterioare supraetajate L1-S1 cu amprentari discale regionale, mici tasari somatice anterioare T12-L2, osteofitoza marginala anterioara

Ecografie abdominala

- RS=129/57mm, IP=1 cm, fara calculi, fara staza pielocaliceala;
- RD=128/58mm, IP=1cm, fara calculi, fara staza pielocaliceala.

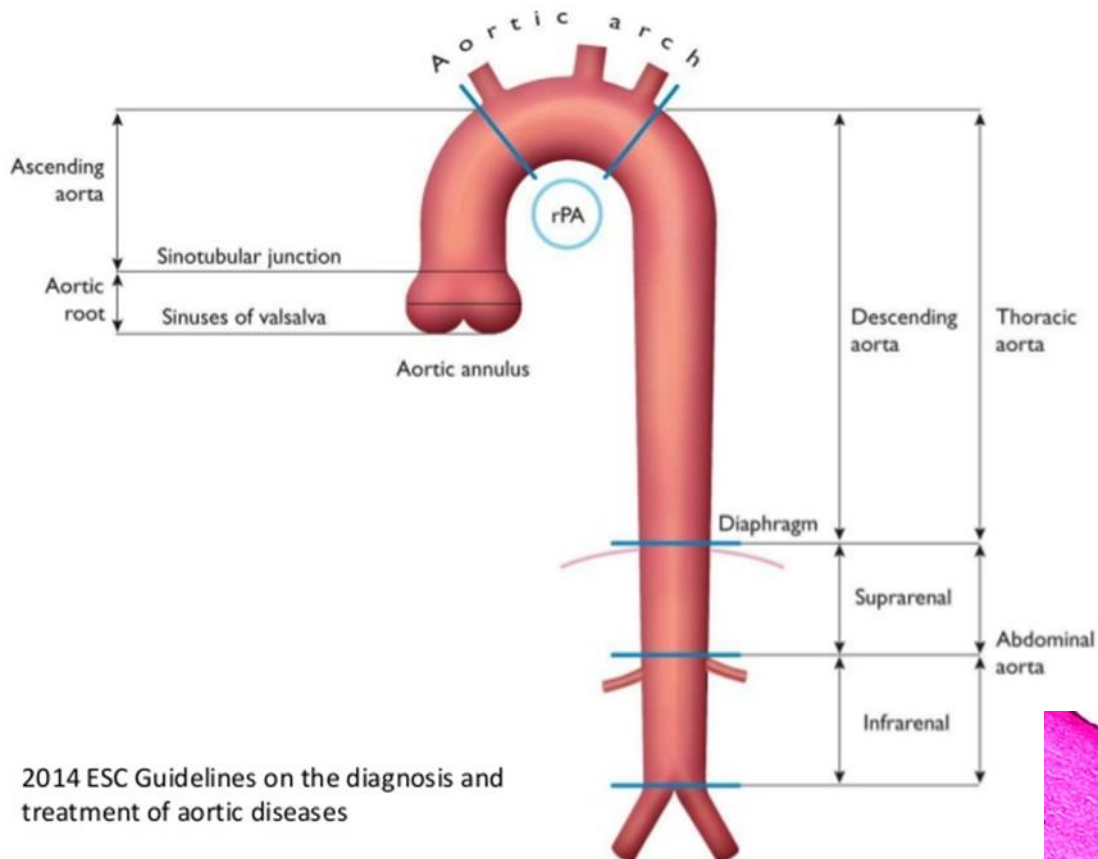
PRIMA ETAPA DIAGNOSTICA

LOMBALGIE STANGA si HIPERTENSIUNE
ARTERIALA GRADUL III

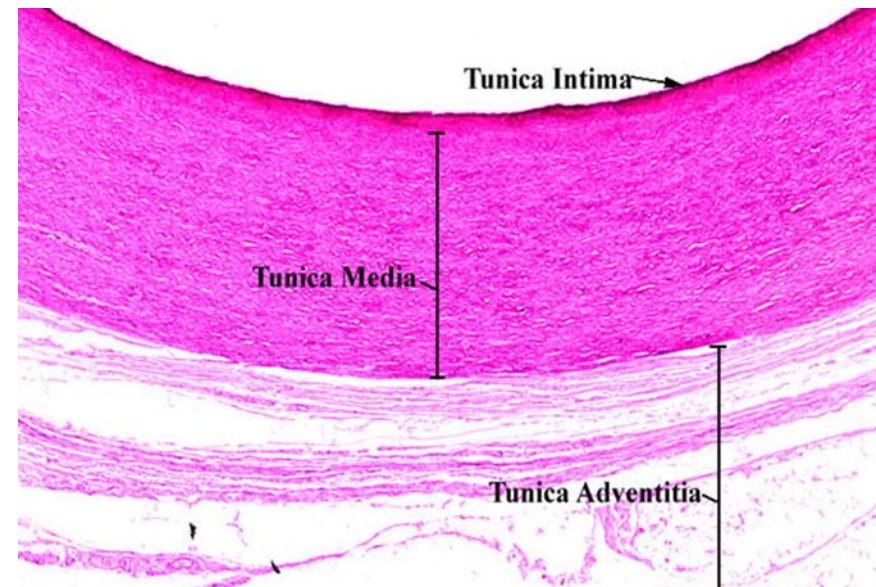
CT abdomen cu SDC

- Aorta abdominala cu diametrul in plan axial aprox 3.2 cm cu decelarea unui **fald de disectie extins cranio-caudal aparent de la nivelul segmentului ascendent al aortei toracale pana la emergenta arterelor renale, ce asociaza defect de umplere partiala la nivelul arterei renale stangi precum si defect de umplere endoluminal complet la nivelul arterei iliace comune stangi pe o lungime de aproximativ 6cm, pana la bifurcatia acesteia. RS dimensiuni crescute cu multiple leziuni hipodense difuze postadministrare SDC la niv parenchimatous (leziuni de hipoperfuzie).**

Anatomia si impartirea topografica



2014 ESC Guidelines on the diagnosis and treatment of aortic diseases



AngioCT

Aorta ascendenta cu diametrul supravalvular de 4.2 cm, fara fald de disectie. Arc aortic 3.27 cm prezinta la nivelul emergentei arterei subclavii stangi **fald de disectie ce se extinde la nivelul aortei descendente toracice**, fara implicarea arterelor emergente din arcul aortic. **Aorta abdominala prezinta fald de disectie ce cuprinde portiunea proximala a trunchiului celiac si intereseaza artera renala stanga**. Artera renala dreapta si artera mezenterica superioara se incarca din lumenul adevarat, fara fald de disectie decelabil. **Artera iliaca comuna stanga prezinta ocluzie proximal de emergenta**. Artera iliaca stanga si femurala stanga permeabile cu incarcare cel mai probabil retrograda. Artera femuraka comuna dreapta prezinta fald de disectie ce se extinde la nivelul arterei femurale profunde.

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x 1.33

Inst: NEUROMED TIMISOARA

Model: Sensation 64

86

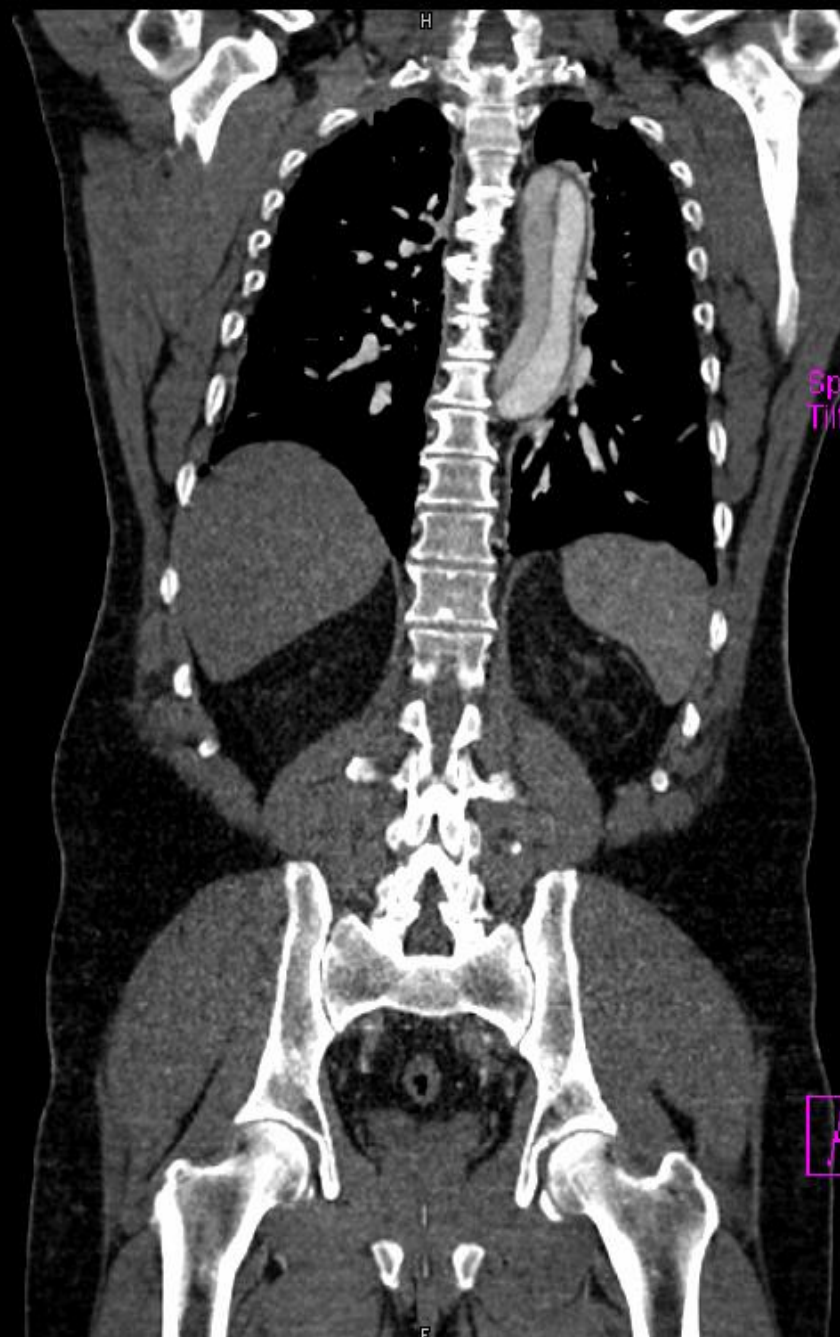
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Tilt: 0

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CS:
TI:
kV: 120.00
mA:
Feed:

A

CM: Ultravis
GT: 0.00
ImC: CONTRAST
W: 00500
C: 00140



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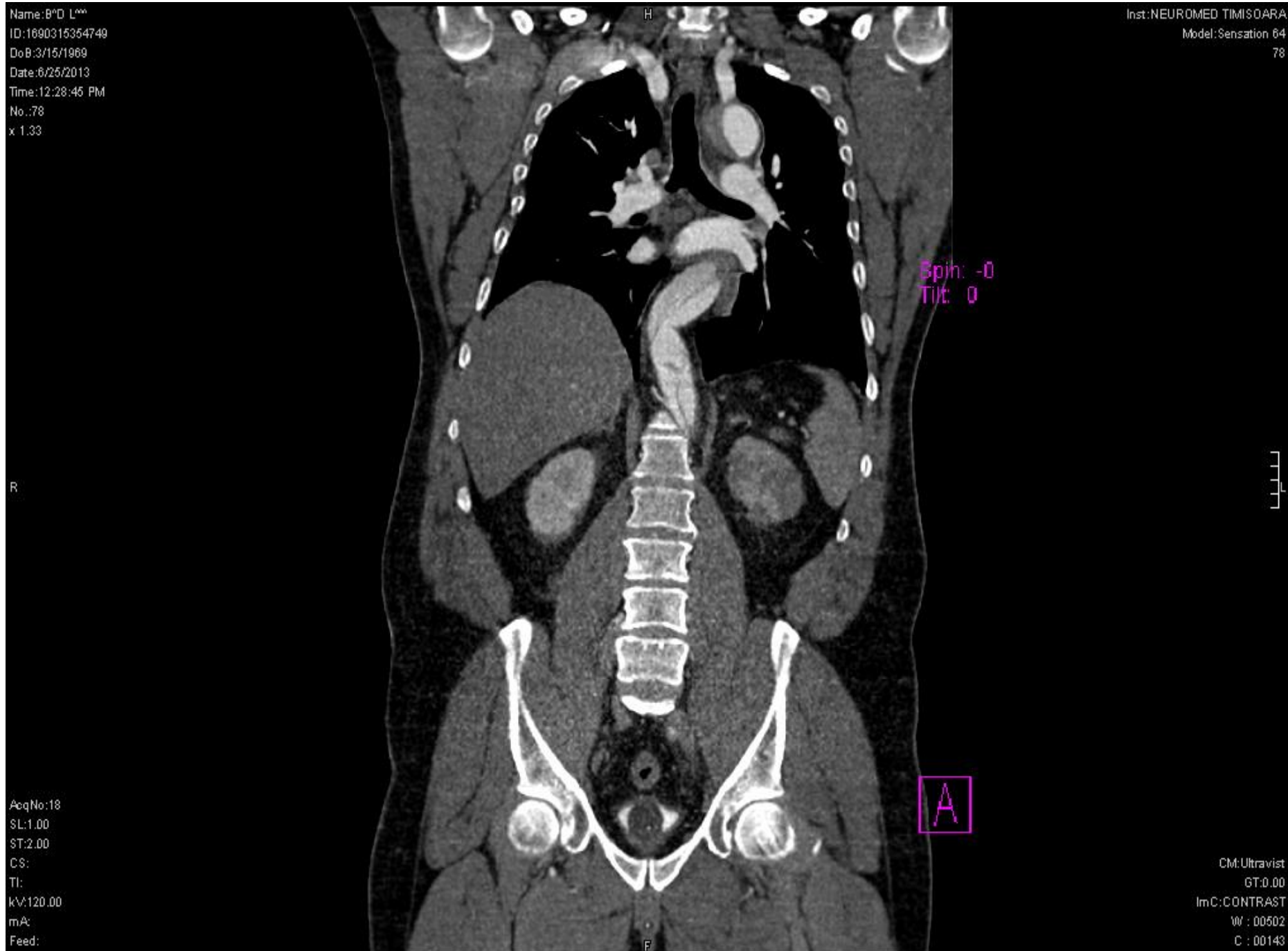
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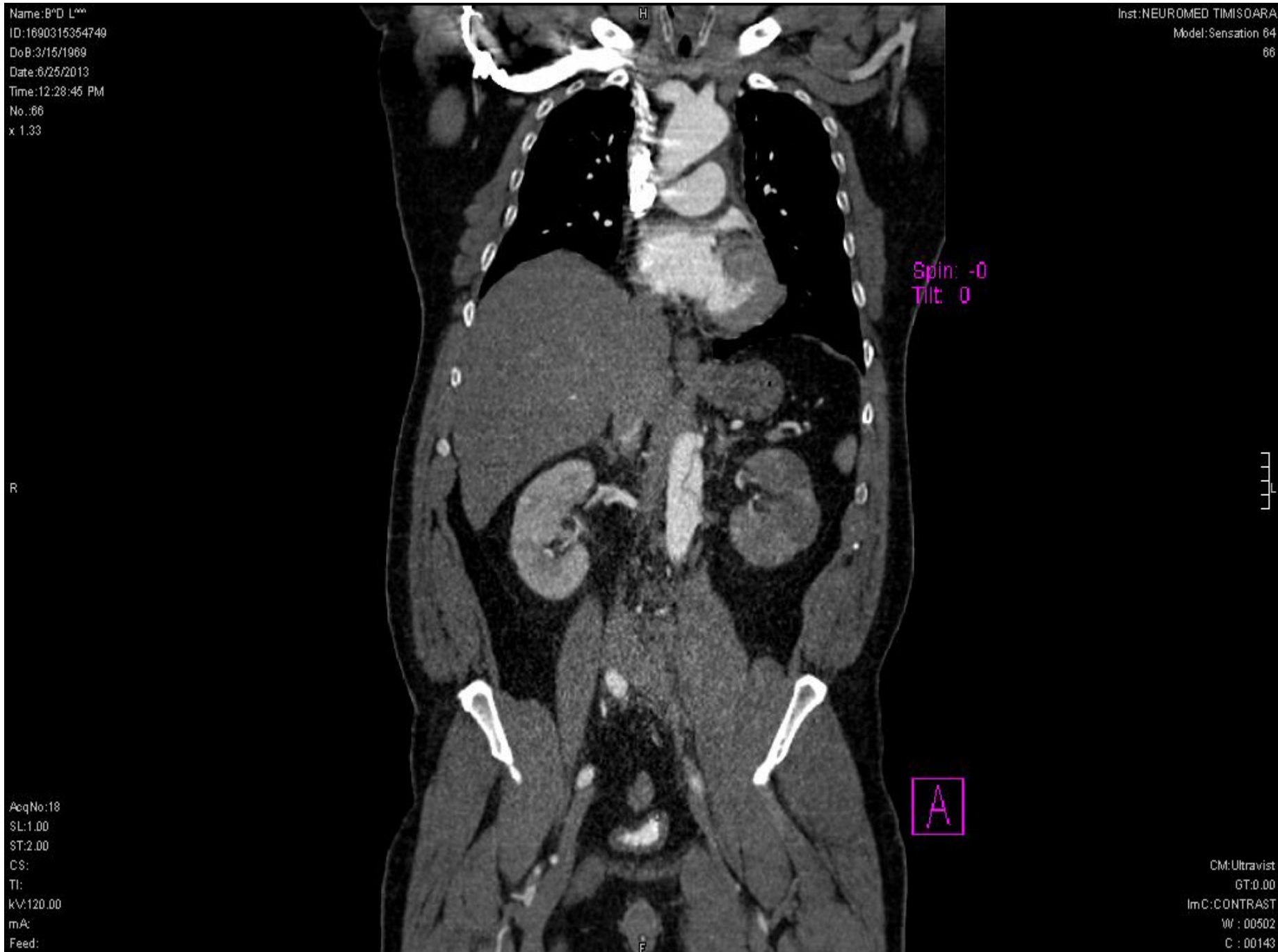
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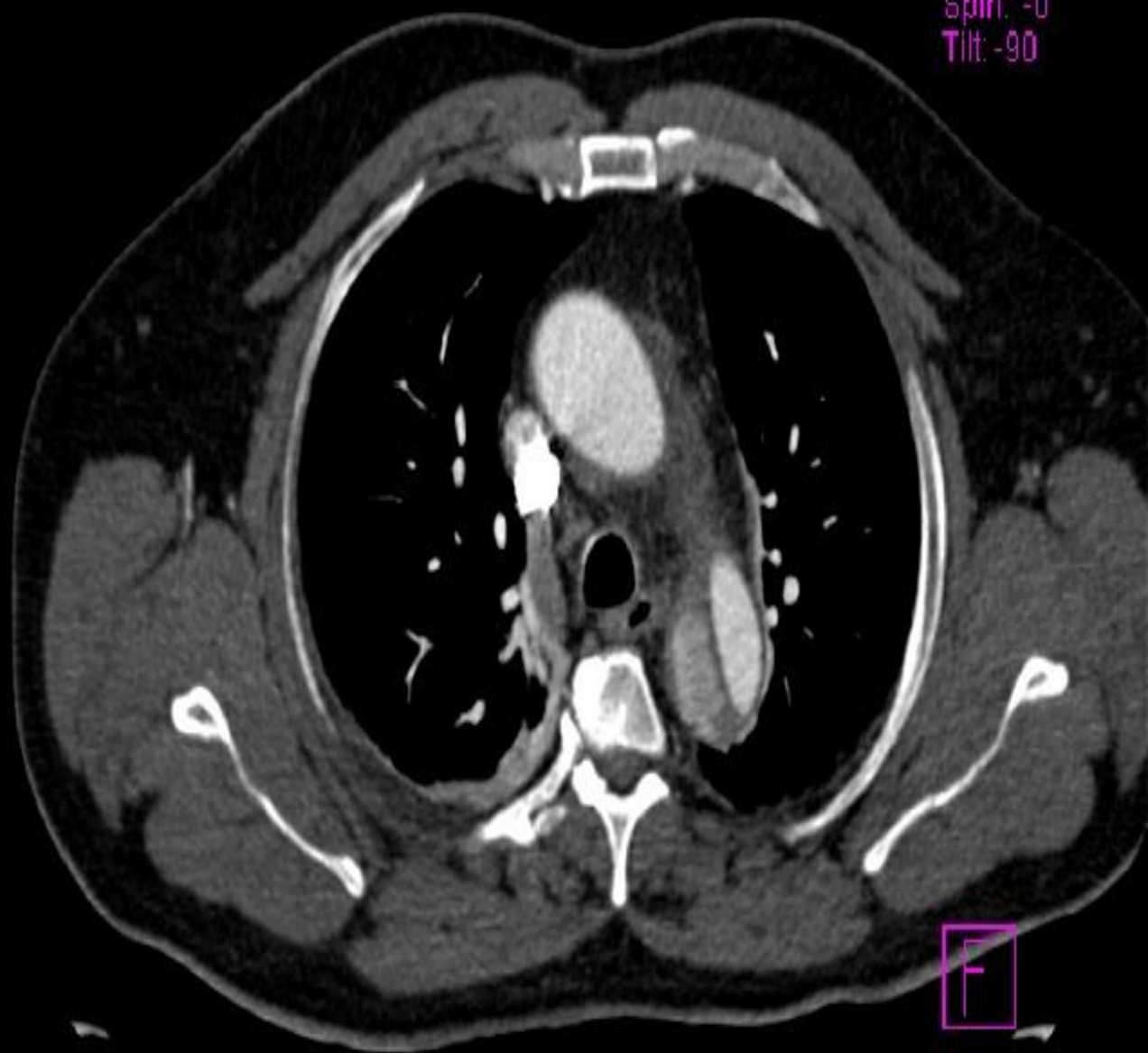


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kV: 120.00
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ImC: CONTRAST
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C: 00143

Spin: -0
Tilt: -90



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Date: 6/25/2013
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x 1.32

Inst: NEUROMED TIMISOARA
Model: Sensation 64
33

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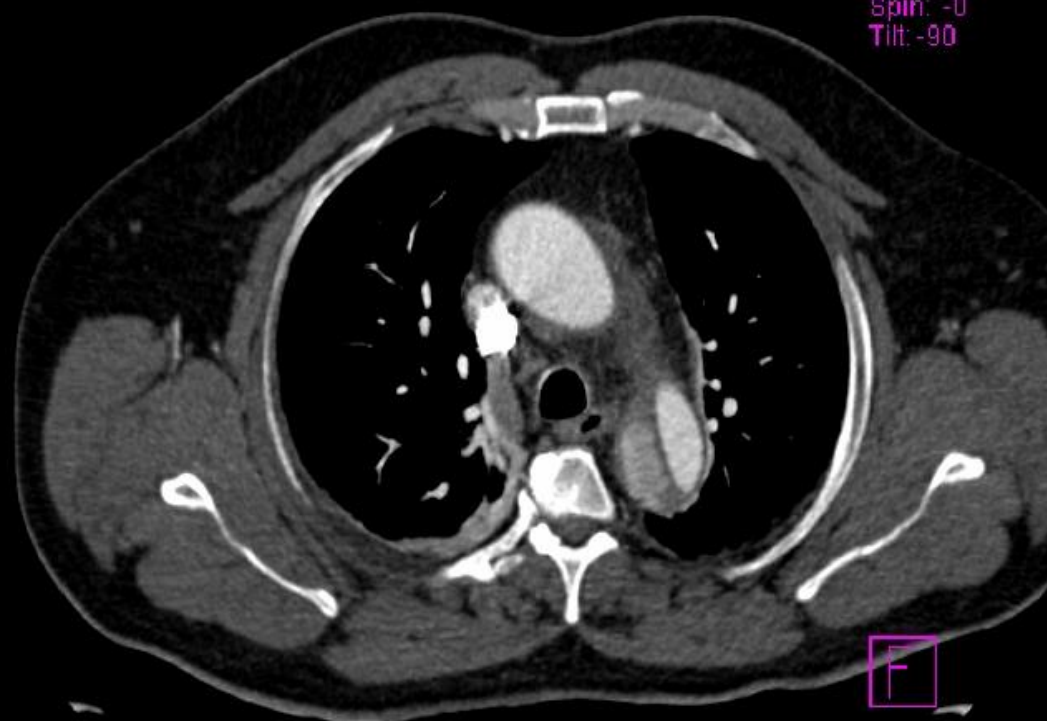
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CM: Ultravist
GT: 0.00
ImC: CONTRAST
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C: 00143

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ID: 1690315354749
DoB: 3/15/1989
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Inst: NEUROMED TIMISOARA

Model: Sensation 64

5

LAO/RAO 152
CRAN/CAUD -4

LAF

L

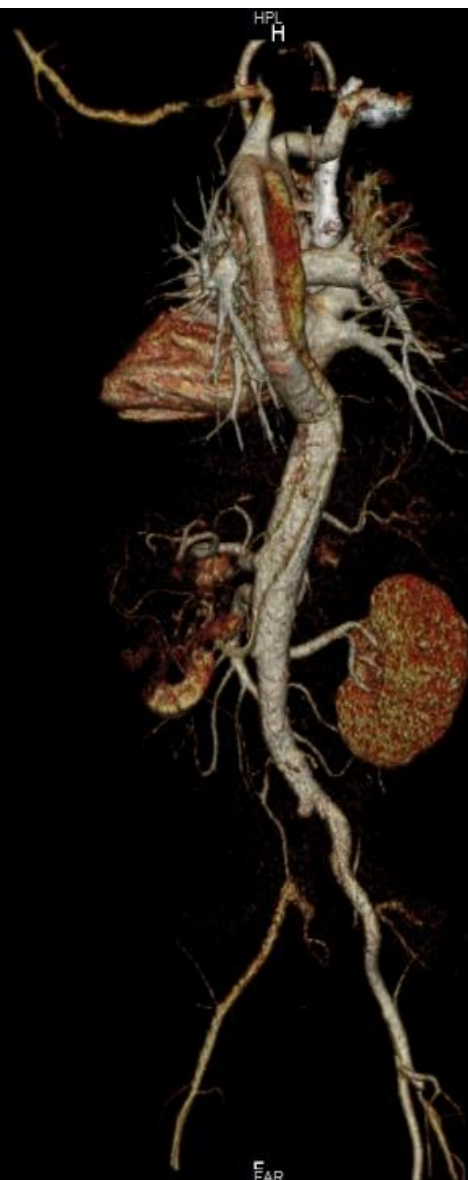
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C : 00127



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DoB: 3/15/1989
Date: 6/25/2013
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Inst: NEUROMED TIMISOARA
Model: Sensation 64
2

LAO/RAO 0
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mA:
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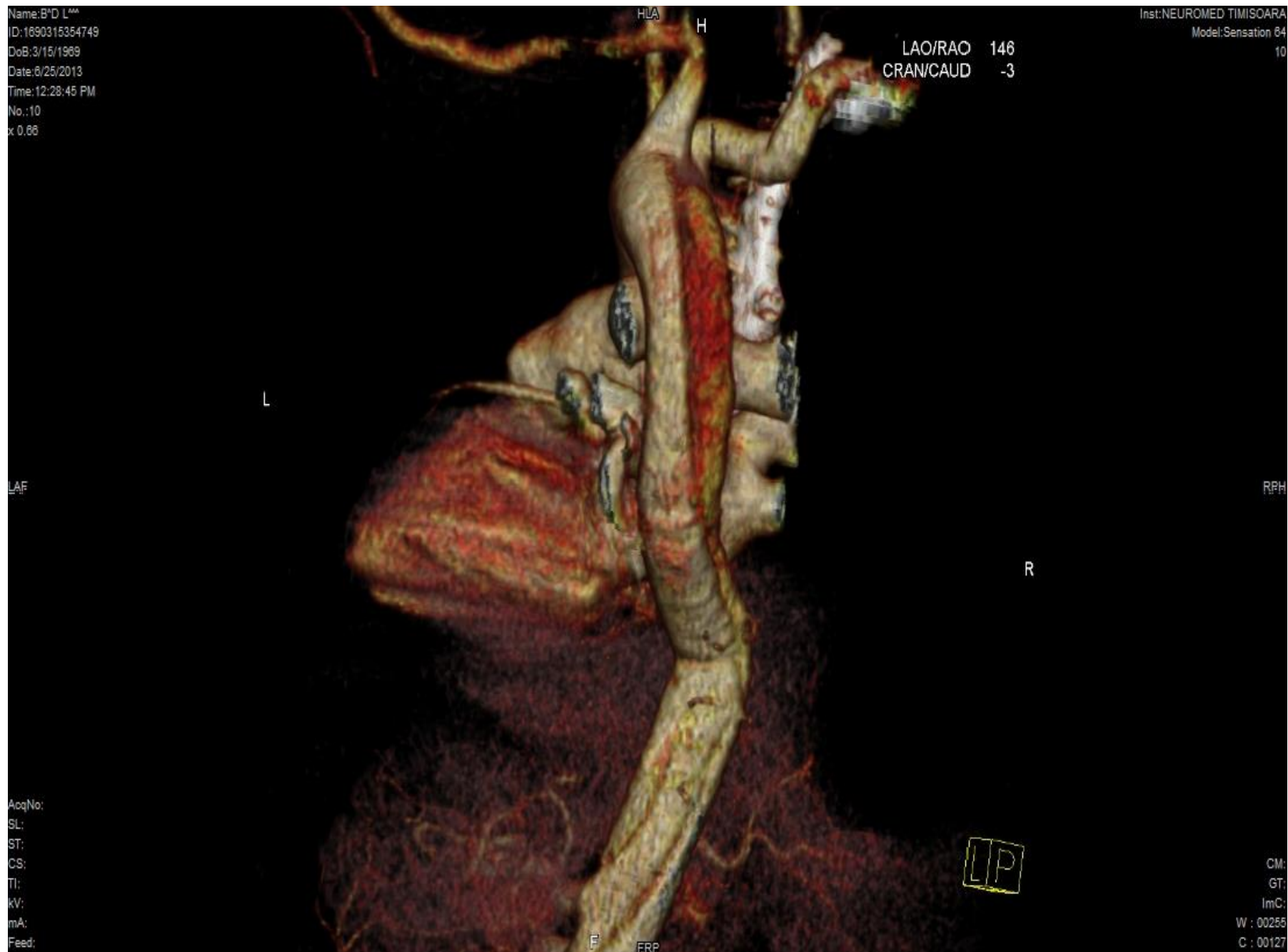
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C : 00127



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Time: 12:28:45 PM
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x 0.86

Inst: NEUROMED TIMISOARA
Model: Sensation 64
10

LAO/RAO 146
CRAN/CAUD -3



AcqNo:
SL:
ST:
CS:
TI:
KV:
mA:
Feed:

CM:
GT:
ImC:
W : 00255
C : 00127

Name: B'D L^{MM}
ID: 1690316354749
DoB: 3/15/1969
Date: 6/25/2013
Time: 12:28:45 PM
No.: 15
x 0.66

Inst: NEUROMED TIMISOARA
Model: Sensation 64
15

LAO/RAO 0
CRAN/CAUD 0

R

R

L

L

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KV:
mA:
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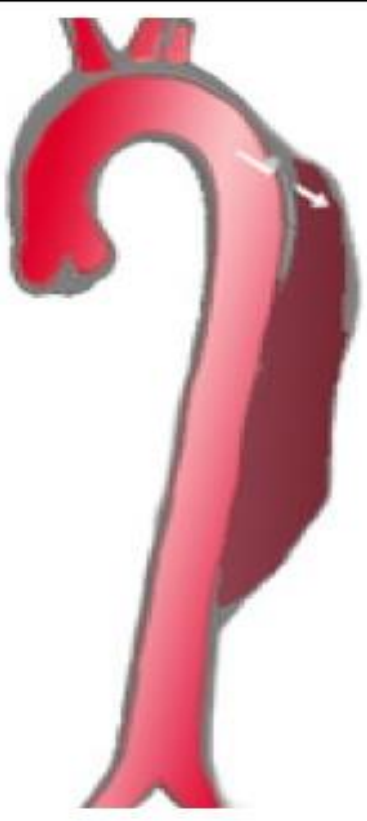
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DIAGNOSTIC POZITIV

- ANEVRIISM DISECANT DE AORTA TORACO-ABDOMINALA TIP STANFORD B
- ECTAZIE DE AORTA ASCENDENTA
- HIPERTENSIUNE ARTERIALA GRADUL III RISC CV FOARTE INALT
- INSUFICIENTA CARDIACA CLASA NYHA II
- BOALA CRONICA DE RINICHI STADIUL III KDOQI
- OBEZITATE ANDROIDA GRADUL III

Classification of aortic dissection

			
Percentage	60%	10–15%	25–30%
Type	DeBakey I	DeBakey II	DeBakey III
	Stanford A (Proximal)		Stanford B (Distal)

Tratament:

- Urapidil 25mg f IV, iv.
- Metoprolol 100mg 2x1cp/zi
- Nitroglicerina 2x10mg,iv 12 pic/min
- Zofenopril 30mg/zi
- Furosemid 2f la 6h
- Rilmenidina 1mg 1cp/zi
- Atorvastatina 40mg/zi
- Tramadol 100mg/zi
- Esomeprazol 40mg 1f/zi

Evolutie

- TA=170/110mmHg sub tratament
- Ora 21:
 - subiectiv-stare generala alterata, lombalgii stangi, dureri la nivelul membrului inferior stang
 - obiectiv
 - tegumente reci la nivelul membrului inferior stang
 - puls slab perceptibil la artera tibiala posterioara si pedioasa stanga

- Diagnostic-ischemie acuta membru inferior stang

25.06.2013

- Pacientul este transferat in Clinica de Chirurgie Cardiovasculara a IBCV Timisoara unde se practica by-pass femuro-femural cu proteza armata de goretex 8mm pentru refacerea fluxului arterial

25.06.2013	26.06.2013	27.06.2013
Hb= 17.1 g/dl	Hb= 11.3 g/dl	Hb= 11 g/dl
Ht=50%	Ht= 33.1 %	Ht= 31.7 %
L= 17500 /mm ³	L= 18000 /mm ³	L= 19000 /mm ³
Tr=170000/mm ³	Tr=101000 /mm ³	Tr=100000 /mm ³
Cr= 1.5 mg/dl	Cr= 4.14 mg/dl	Cr= 8.69 mg/dl
RFG= 51 ml/min	RFG= 16 ml/min	RFG= 7 ml/min
Na=141 mEq/l	Na=134 mEq/l	Na=132 mEq/l
K=3.3 mEq/l	K= 3.8 mEq/l	K= 4.6 mEq/l
ASAT=23U/l	ASAT= 242 U/l	ASAT= 300 U/l
ALAT=42U/l	ALAT= 384 U/l	ALAT= 773 U/l

- In 28.06.2013 pacientul este reinternat in
Clinica Medicala a Spitalului Municipal
Timisoara

25.06.2013	26.06.2013	27.06.2013	28.06.2013
Cr=1.5 mg/dl	Cr=4.14 mg/dl	Cr=8.69 mg/dl	Cr=10.6 mg/dl
RFG=51 ml/min	RFG=16 ml/min	RFG=7 ml/min	RFG=5 ml/min
Na=141 mEq/l	Na=134 mEq/l	Na=132 mEq/l	Na=130 mEq/l

Diagnostic

- Insuficienta renala acuta (AKIN 3)
- Ischemie renala acuta prin disectie de aorta abdominala
- Nefropatie de contrast
- Status post bypass femuro-femural pentru ischemie acuta membru inferior stang
- Anevrism disecant de aorta toraco-abdominala tip Stanford B
- Ectazie de aorta ascendenta

2.07.2013-pacientul este transferat in Clinica de Dializa a Spitalului Judetean Timisoara

- Se continua tratamentul conservator, fiind temporizata initierea dializei
- Pe durata internarii-obiectiv : secretii purulente la nivelul suturii chirurgicale inghinale stangi si a locului de insertie cateter perfuzie
- Paraclinic: Culturii plaga cateter de perfuzie-Stafiloccous Aureus, sutura chirurgicala inghinala stanga-Esherichia Coli

8.07.2013 → Clinica Medicala
Spitalul Municipal pentru
continuarea tratamentului

25.06.2013	26.06.2013	27.06.2013	28.06.2013	8.07.2013
Cr=1.5 mg/dl	Cr=4.14 mg/dl	Cr=8.69 mg/dl	Cr=10.6 mg/dl	Cr=2.4 mg/dl
RFG=51 ml/min	RFG=16 ml/min	RFG=7 ml/min	RFG=5 ml/min	RFG=30 ml/min
Na=141 mEq/l	Na=134 mEq/l	Na=132 mEq/l	Na=130 mEq/l	Na=134 mEq/l
K=3.3 mEq/l	K=3.8 mEq/l	K=4.6 mEq/l	K=3.7 mEq/l	K=3.8 mEq/l
L= 17500/mm ³	L= 18000/mm ³	L= 19000/mm ³	L=9200/mm ³	L=27000/mm ³
ASAT=23U/l	ASAT=242 U/l	ASAT=300 U/l	ASAT=175U/l	ASAT=242 U/l
ALAT=42U/l	ALAT=384 U/l	ALAT=773 U/l	ALAT=415U/l	ALAT=384 U/l

Diagnostic

- Sepsis cu punct de plecare cutanat (insertie cateter de perfuzie-Stafilococcus Aureus, sutura chirurgicala inghinala stanga-Escherichia Coli)
- Insuficienta renala acuta (AKIN 3) prin ischemie renala acuta secundara disectiei de aorta abdominala si nefropatie de contrast, remisa

Evolutie favorabila: TA=140/80mmHg,
FC=80b/min

8.07.2013	10.07.2012	12.07.2012
Cr= 2.4 mg/dl	Cr= 1.8 mg/dl	Cr= 1.7 mg/dl
RFG=30 ml/min	RFG= ml/min	RFG= ml/min
Na=134 mEq/l	Na=137 mEq/l	Na=138 mEq/l
K=3.8 mEq/l	K=3.9 mEq/l	K=4.4 mEq/l
L= 27000 /mm ³	L= 17000 /mm ³	L=9000 /mm ³
ASAT= 242 U/l	ASAT=24 U/l	ASAT=24 U/l
ALAT= 384 U/l	ALAT=24 U/l	ALAT=22 U/l

Tratament la externare

- Bisoprolol 5mg 2x1cp/zi
- Lercanidipina 20mg 2x1 cp/zi
- Doxazosin 4mg 2x1cp/zi
- Clonidina 0.15mg 3x1cp/zi
- Acenocumarol 4mg 1cp/zi in functie de INR

Septembrie 2013→control

- Obiectiv: TA=140/80mmHg, FC=60b/min
- Ecografie abdominala- RS=129/57mm, IP=10mm, RD=128/58mm, IP=9mm, aorta abdominala retropancreatic cu aspect de tromb organizat.

Particularitatea cazului

- Debutul cu dureri abdominale localizate in flancul si fosa iliaca stanga, cu iradiere in membrul inferior stang si parestezii la acest nivel, lombalgii intense (dgn diferential cu colica renala stanga, lombosciatica)
- Disectia extinsa ce a inclus portiunea proximala a trunchiului celiac, artera renala stanga, arterele iliaca comuna stanga, a femurale
- Complicatiile extrem de severe survenite (IRA, sepsis)
- Evolutie favorabila cu trombozarea anevrismului disecant si remiterea insuficientei renale acute

Disectia de aorta

Generalitati Aorta

- Transporta in cursul vietii ≈ 200 milioane litri sange
- Controlul rezistentei vasculare sistemice
- Effectul Winkessel: “pompa nr 2”
- Diametru mediu $< 40\text{mm}$ cu o crestere de $0,7\text{-}0,9\text{mm/decada}$ de viata

Evaluarea aortei

- Conform recomandarilor ESC 2014 pentru afectiunile aortei: **utilizarea clasificarii Stanford¹**
 - Utilizarea oricand este posibil de imagini cu reconstructie 3D
 - » Masurarea diametrului maxim perpendicular pe linia mediana
 - » Existenta de aneurisme tortuoase face ca masuratorile a diametrelor pe sectiuni axiale sa contina erori²
 - Imagini “clasice” cu sectiuni
 - » Utilizarea axei mici a elipsei: pentru cele regulate³
Excentricitate: necesare sectiuni oblice pentru a estima cat mai real axa mica

1. 2014 ESC Guidelines on the diagnosis and treatment of aortic diseases Document covering acute and chronic aortic diseases of the thoracic and abdominal aorta of the adult

2. . Ihara T, Komori K, Yamamoto K, Kobayashi M, Banno H, Kodama A. Threedimensional workstation is useful for measuring the correct size of abdominal aortic aneurysm diameters. Ann Vasc Surg 2013;27:154–161.

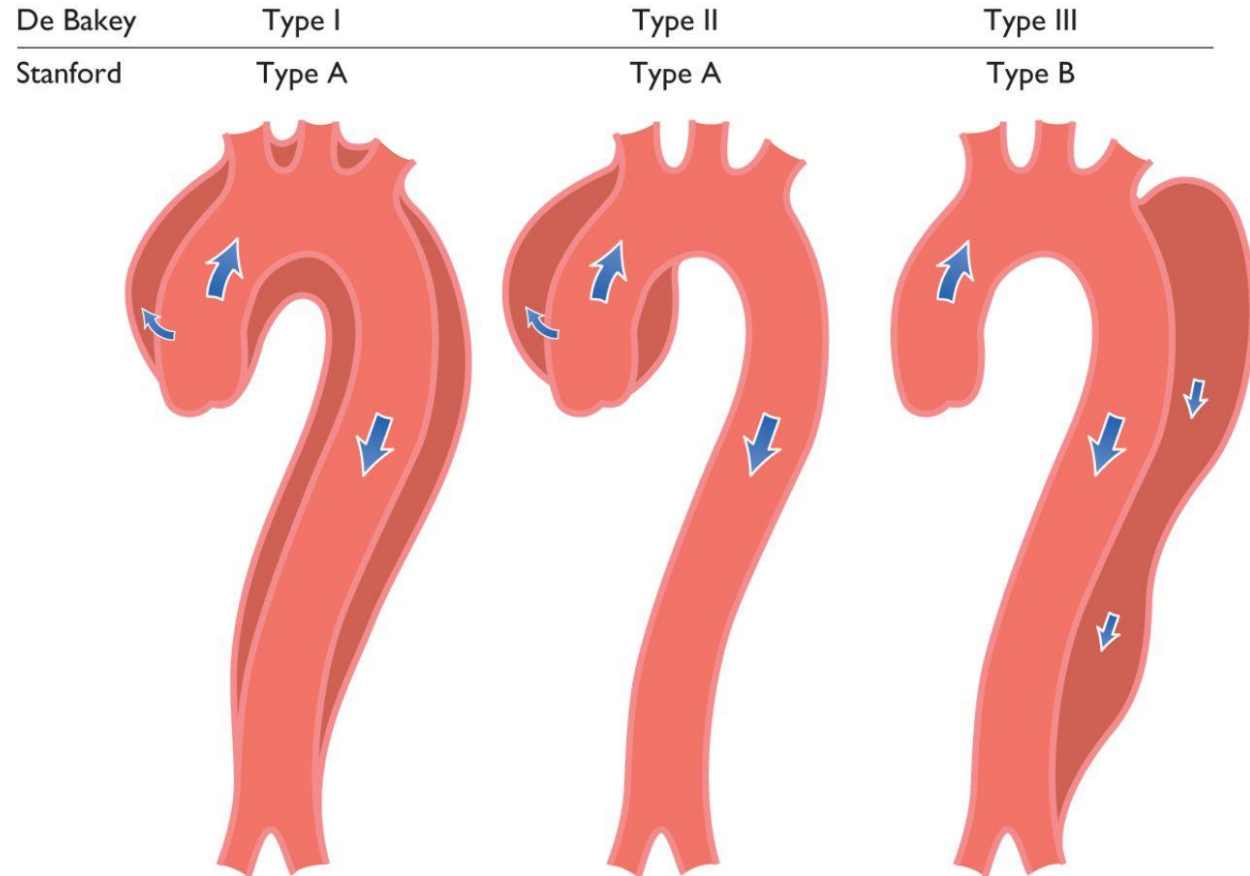
3. 8. Chaikof EL, Blankensteijn JD, Harris PL, White GH, Zarins CK, Bernhard VM, Matsumura JS, May J, Veith FJ, Fillinger MF, Rutherford RB, Kent K. Reporting standards for endovascular aortic aneurysm repair. J Vasc Surg 2002;35:1048–1060.

Erori de masurare

- Structura geometrica complexa
- functii matematice complexe de calcul a dimensiunilor maxime a suprafetelor curbe neregulate
- 7% din pacientii cu axa mica <50mm au diametrul anevrismal >55mm⁴
- Limita **Bland-Altman(consens)**
 - >3-5mm diferenta intre 2 examinari seriate sunt considerate semnificative
- Nu exista inca un consens de a include si peretele in calculul diametrelor

4. . Lederle FA, Wilson SE, Johnson GR, Reinke DB, Littooy FN, Acher CW, Messina LM, Ballard DJ, Ansel HJ. Variability in measurement of abdominal aortic aneurysms. Abdominal Aortic Aneurysm Detection and Management Veterans Administration Cooperative Study Group. J Vasc Surg 1995;21:945 –952.

Recomandarile privind evaluarea aortei



Disectia de aorta acuta

- <14zile de la debutul simptomatologiei
- Propagarea de obicei de la nivelul unei leziuni intinale: antero/retrograd
- 6/100000 per an⁵
- Prognostic mai slab la femei
- 65-75% sunt hipertensivi

5.Howard DP, Banerjee A, Fairhead JF, Perkins J, Silver LE, Rothwell PM. Populationbased study of incidence and outcome of acute aortic dissection and premorbid risk factor control: 10-year

Cazul prezentat

	Type A	Type B
Chest pain	80%	70%
Back pain	40%	70%
Abrupt onset of pain	85%	85%
Migrating pain	<15%	20%
Aortic regurgitation	40–75%	N/A
Cardiac tamponade	<20%	N/A
Myocardial ischaemia or infarction	10–15%	10%
Heart failure	<10%	<5%
Pleural effusion	15%	20%
Syncope	15%	<5%
Major neurological deficit (coma/stroke)	<10%	<5%
Spinal cord injury	<1%	NR
Mesenteric ischaemia	<5%	NR
Acute renal failure	<20%	10%
Lower limb ischaemia	<10%	<10%

Recomadarile ESC privind evaluare

- Evaluarea intregii aorte
 - Diametre
 - Lumen
 - Forma
 - Extinderea
 - Valva aortica
 - Prezenta tromb parietal
 - raporturi
- CT, RMN, ETE- aproximativ aceiasi valoare diagnostica

Computer tomografia si disectia de aorta

- Semnul clasic
 - Flap intimal care separa 2 lumene
- Reconstructia multi-plan este cea mai buna⁷
 - Lungime, diametru, extindere
 - Implicare emergenta vase
 - Ruptura intimei
 - Lumenul adevarat si cel fals
- Specificitate si sensibilitate 96%⁸

7. Rubin GD, Beaulieu CF, Argiro V, Ringl H, Norbash AM, Feller JF, Dake MD, Jeffrey RB, Napel S. Perspective volume rendering of CT and MR images: applications for endoscopic imaging. Radiology 1996;199:321 –330

8. Johnson TR, Nikolaou K, Wintersperger BJ, Knez A, Boekstegers P, Reiser MF, Becker CR. ECG-gated 64-MDCT angiography in the differential diagnosis of acute chest pain. AJR Am J Roentgenol 2007;188:76– 82

“Triple-rule out”

- Termen nou ce utilizeaza o combinatie de EKG-64-slice CT pentru a exclude triada:
 - DISECTIE DE AORTA
 - EMBOLIE PULMONARA
 - ISCHEMIE MIOCARDICA
- Valoare predictiva negativa excelenta
- Elimina prin folosirea EKG-ului a artefactelor date de pulsatiile aortei

OPTIUNI

- Tipul STANFORD A
 - CHIRURGIE prima optiune
- Tipul STANFORD B
 - CHIRURGIE
 - MEDICAL
 - » Daca nu exista semne de hipoperfuzie
 - » Daca nu este la debut

STANFORD B necomplicat

- Medicatie pentru
 - Controlul durerilor
 - Controlul frecventei cardiace
 - Controlul valorilor tensionale
- Necesitatea investigatiilor imagistice succesive