



雙和急診POCUS訓練

陳國智 醫師



醫用超音波學會指導醫師
WINFOCUS director / instructor
急救加護醫學會重症超音波負責人

急診 / 重症 / 介入 / 急性疼痛

經歷

新光急診超音波訓練中心主任

西園醫院急診醫學科主任

急診醫學會超音波委員會主委

台灣疼痛醫學會大體模擬手術講師

診
斷

監
測

介
入

POINT OF CARE ULTRASOUND

~ 存在於臨床需求之所在 ~



LE joint effusion

01/07

Airway

01/14

Needling

01/21

VExUS protocol

01/28

雙和急診POCUS訓練



Central access

02/11

Peripheral access

02/18

EFAST

02/25

雙和急診POCUS訓練



Basic ECHO

03/04

Nerve block-UE(1)

03/11

Nerve block-LE(1)

03/25

雙和急診POCUS訓練



Aorta & IVC

04/01

Liver & Biliary

04/08

Kidney & UB

07/08

Pancreas & Spleen

07/22

雙和急診POCUS訓練



GI tract scan

08/05

Basic lung & heart (PGY)

08/05

Sternum & Ribs

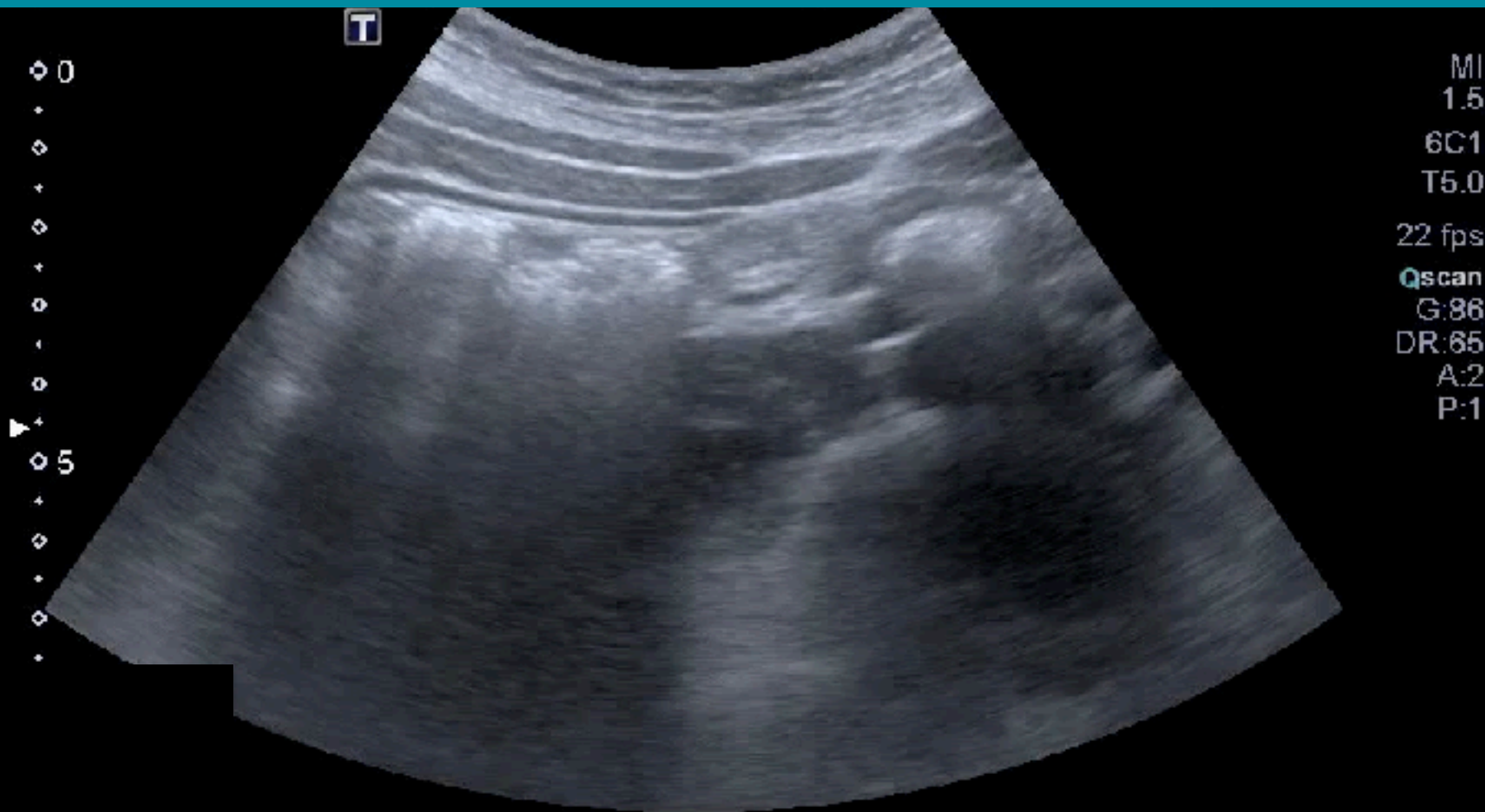
08/19

UE joint effusion

08/26

雙和急診POCUS訓練

GI TRACT IN THIS CLIP ?



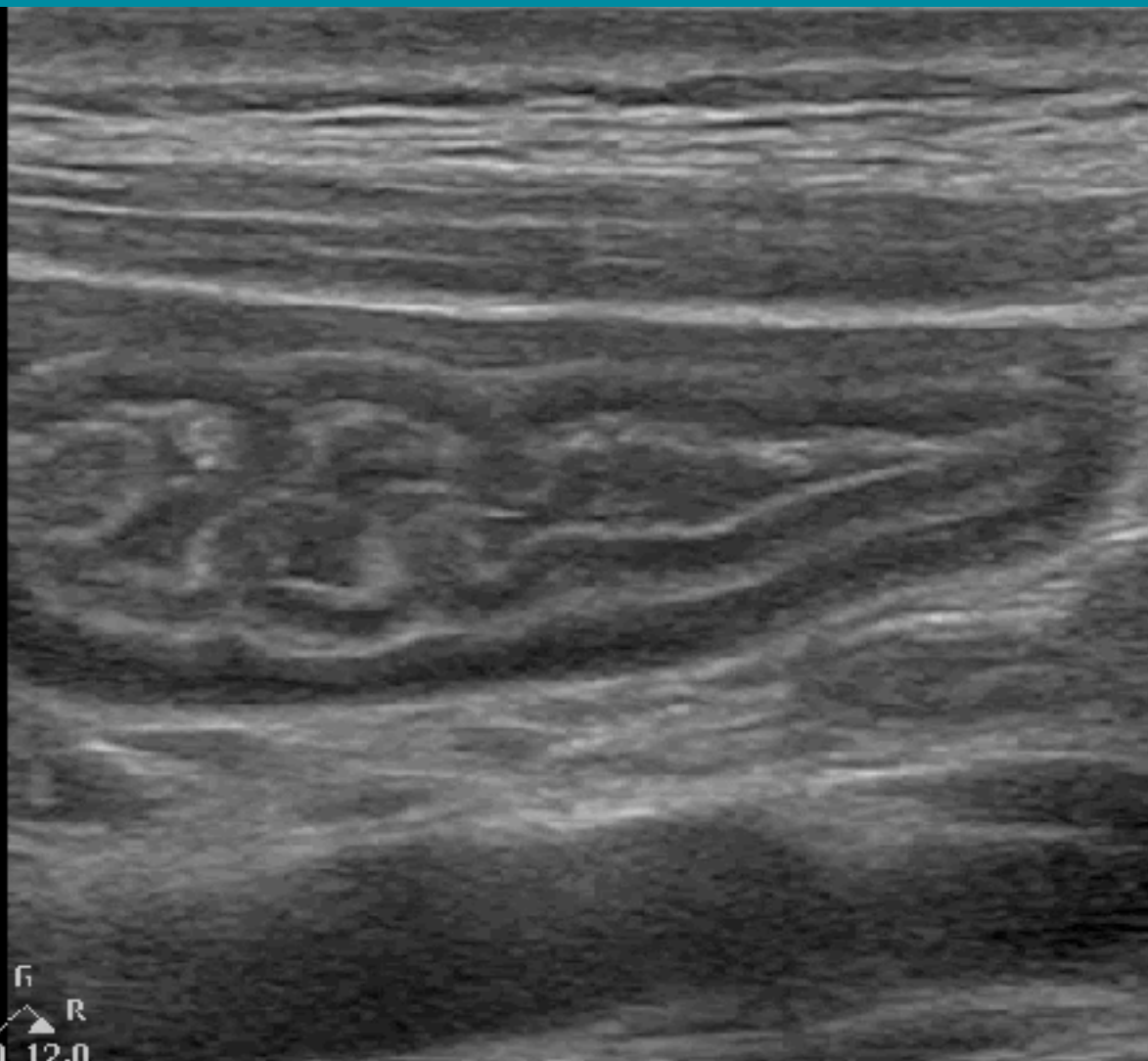
GI TRACT IN THIS CLIP ?

Superficial
L12-3
46 Hz
3.5cm

2D
Res
Gn 100
C. 56
3/2/1



P R
3.0 12.0

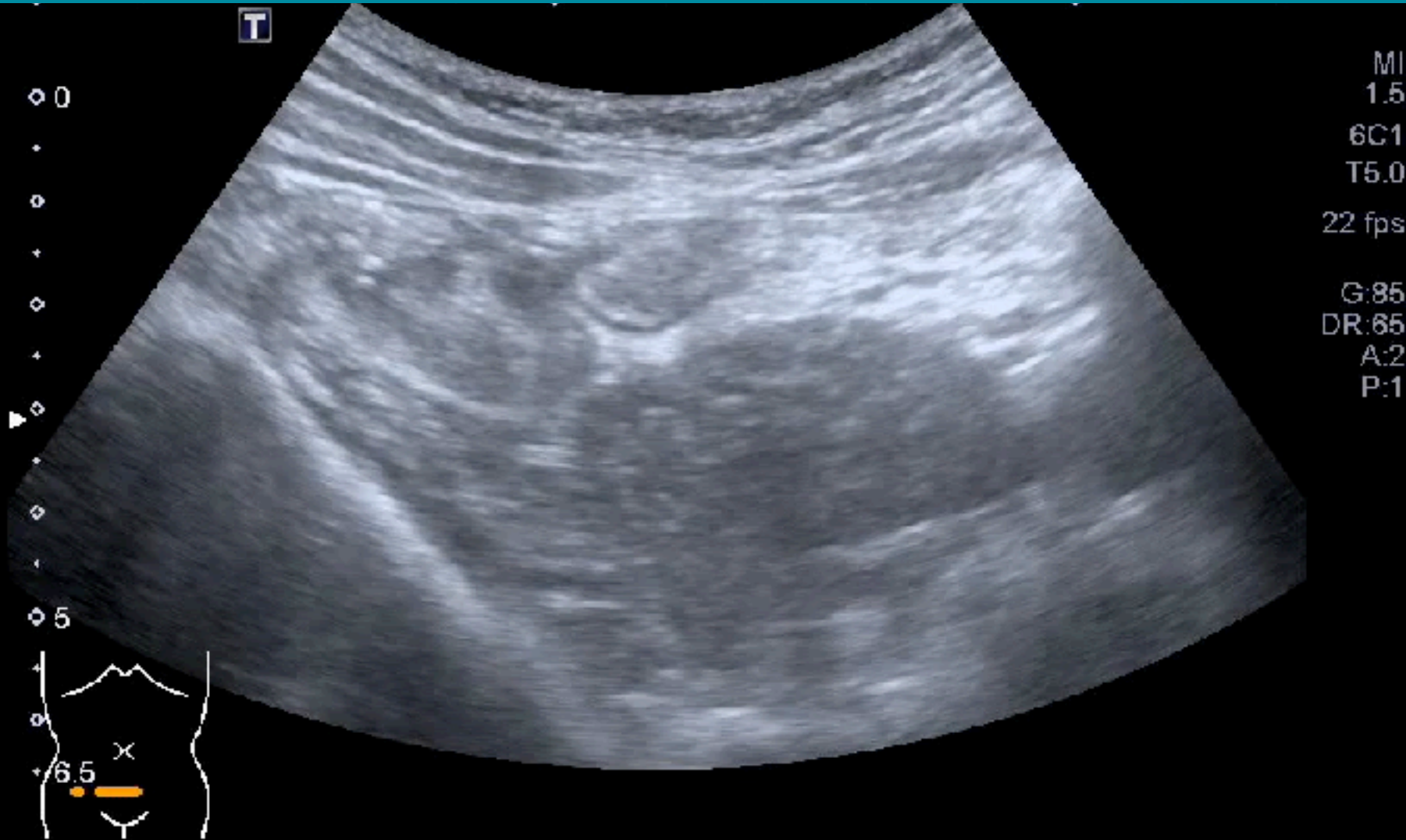


3.5cm

US FINDINGS & DIAGNOSIS ?



ANATOMY, FINDING & DIAGNOSIS



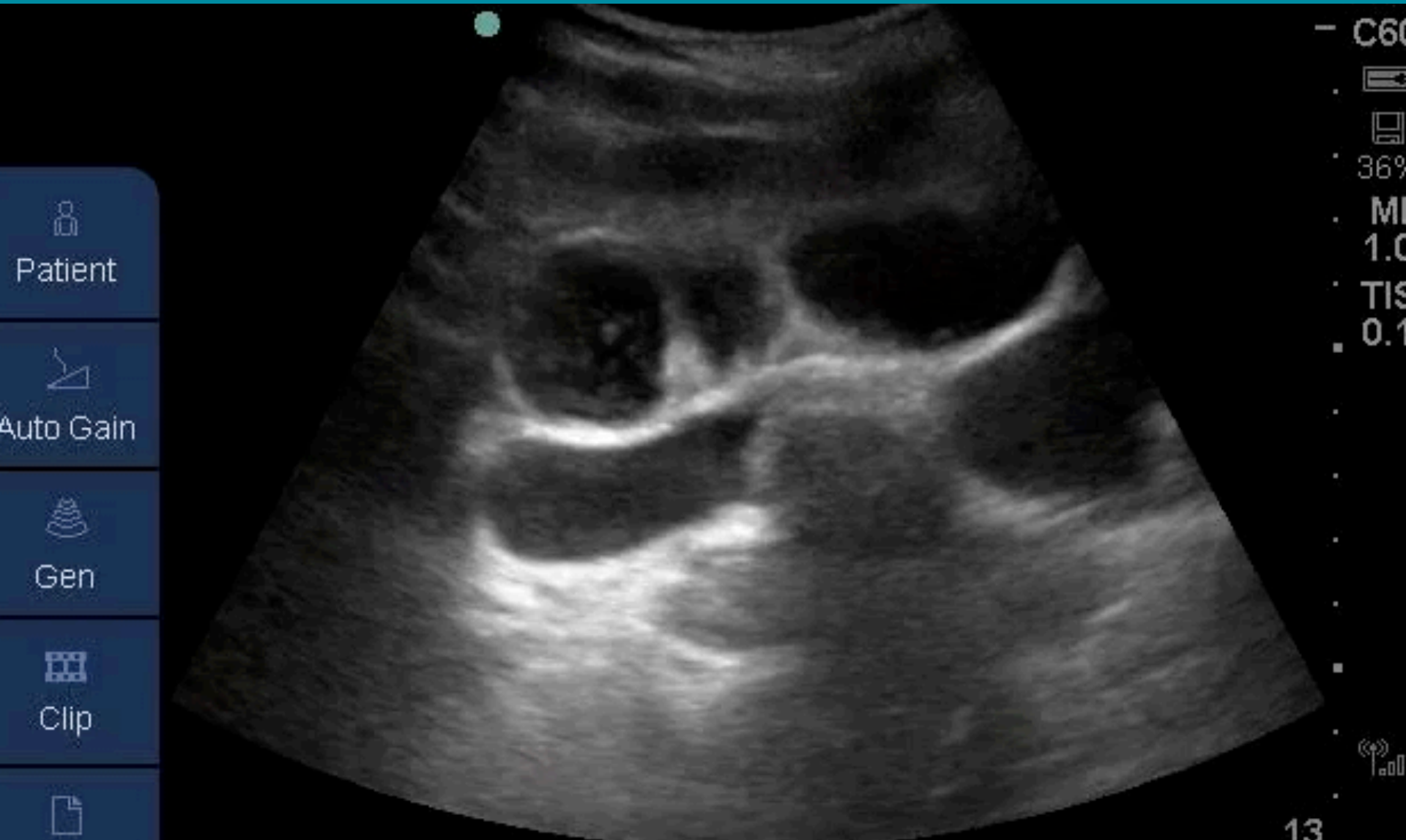
GI TRACT & DIAGNOSIS

GS-1
42 Hz
11.0cm

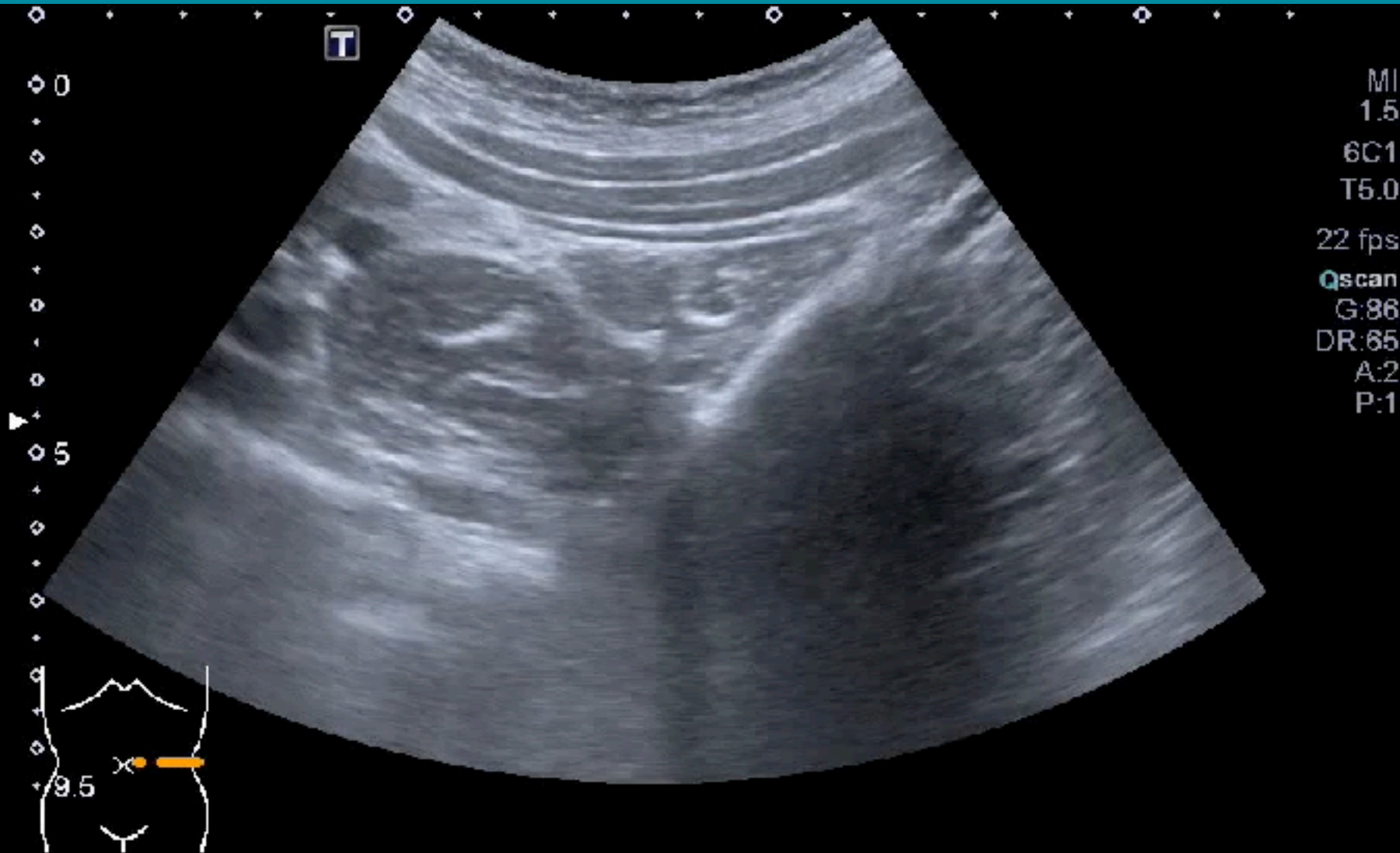
2D
HGen
Gn 66
C. 56
3/3/3



GI TRACT & DIAGNOSIS



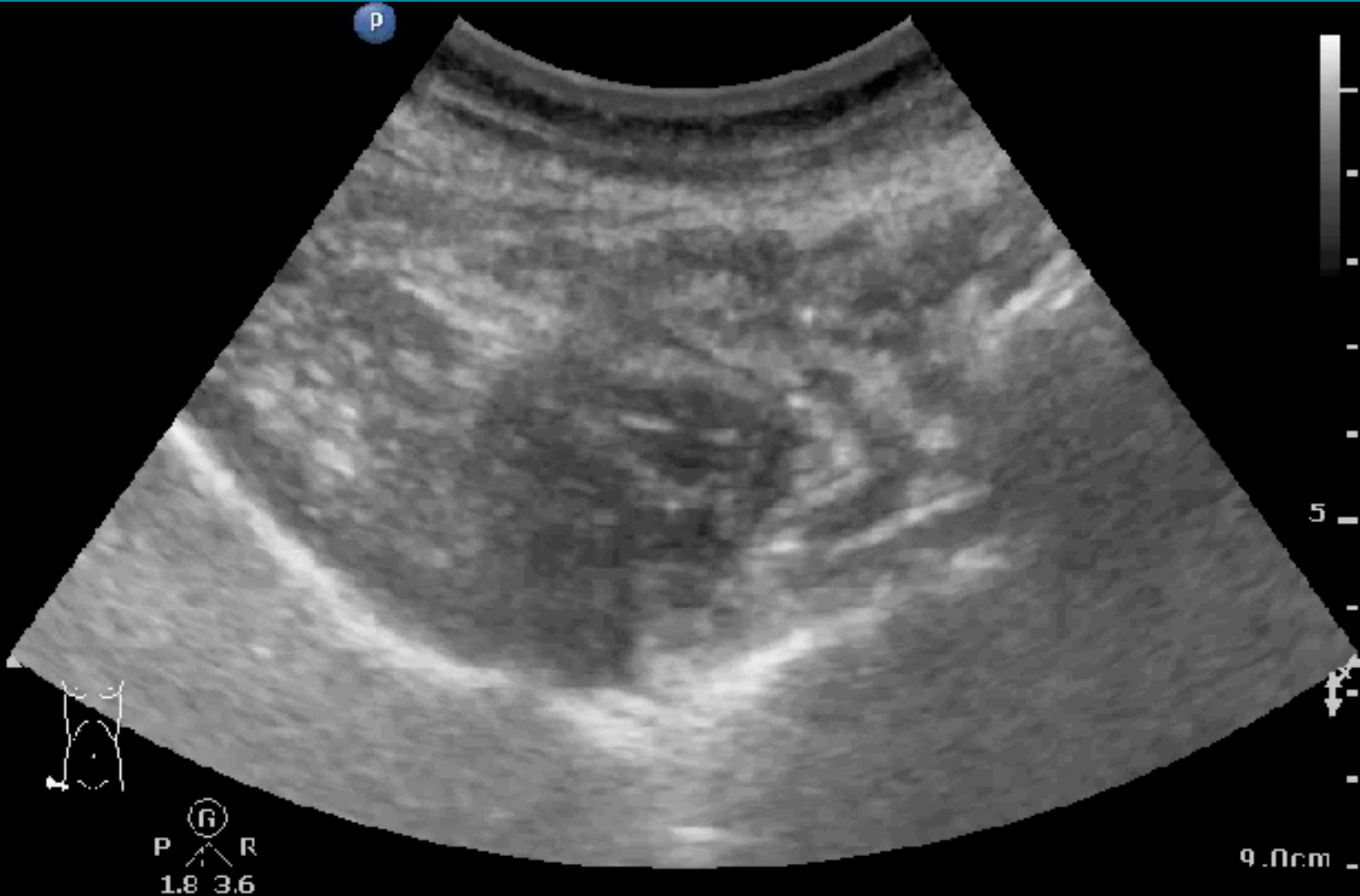
INDICATE COLON



FINDINGS OF THIS CLIP

Abd Gen
C5-1
47 Hz
9.0cm

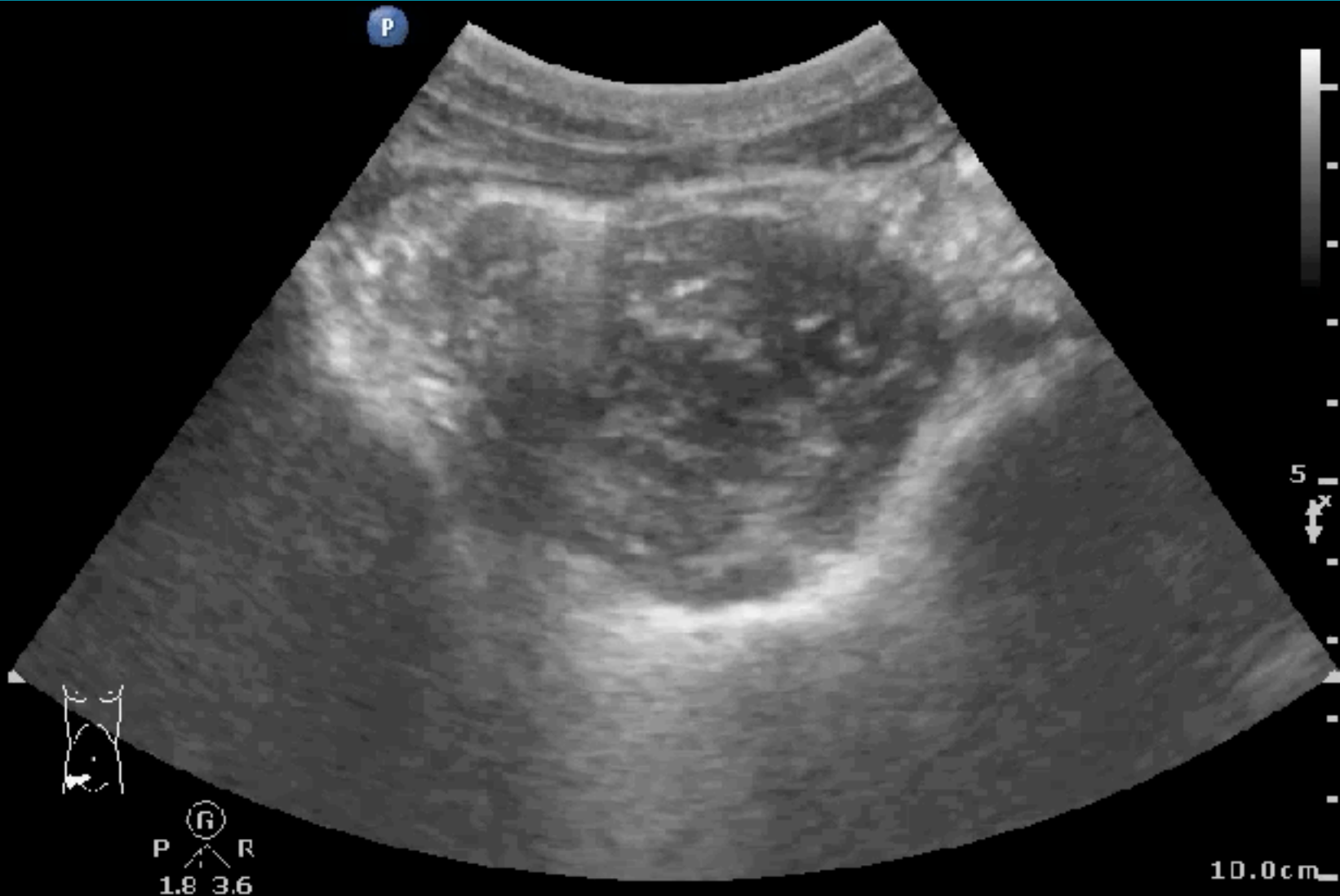
2D
HGen
Gn 76
C. 56
3 / 3 / 3



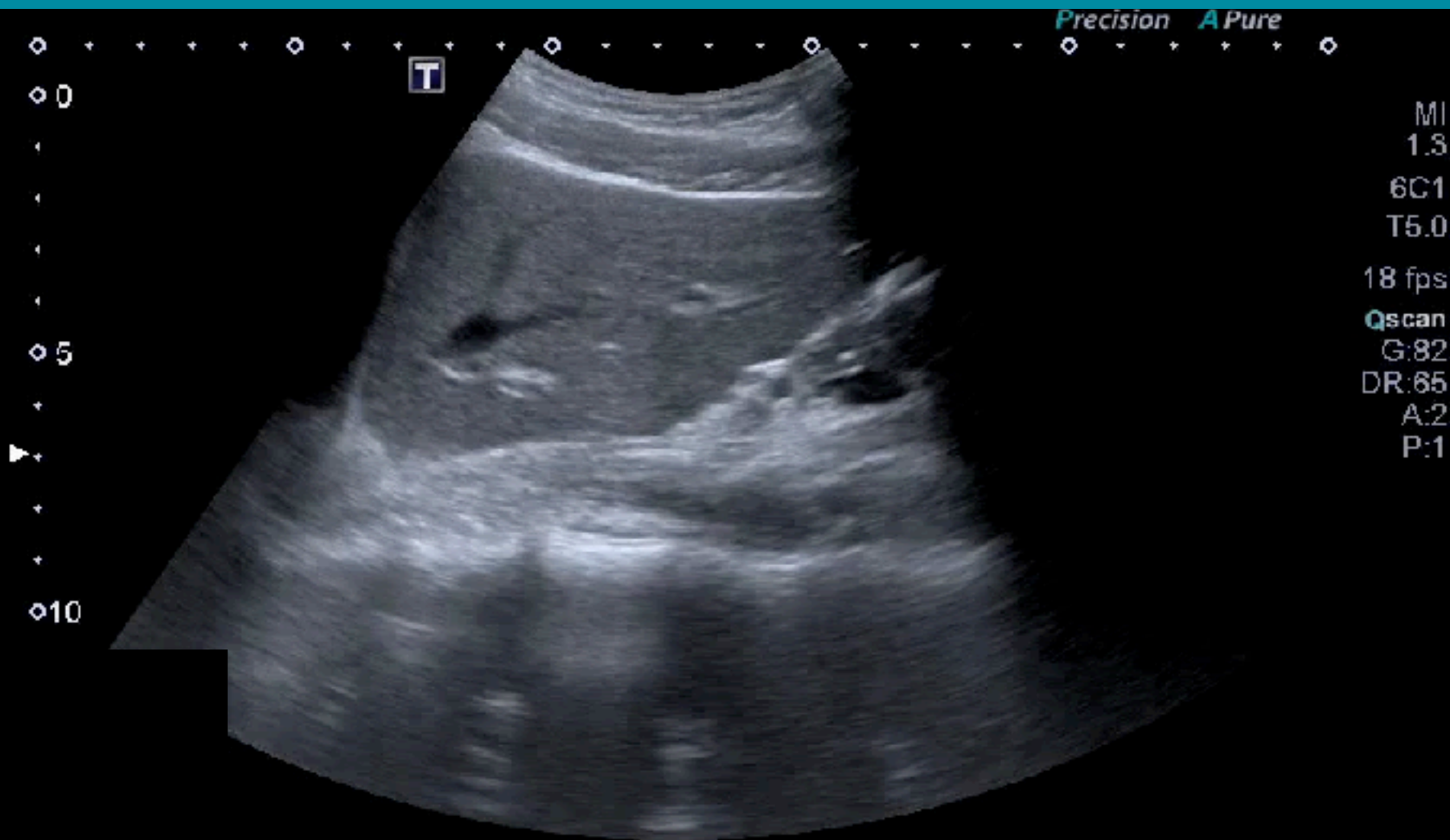
PURPOSE OF THIS SCANNING ?

Abd Gen
C5-1
45 Hz
10.0cm

2D
HGen
Gn 100
C. 56
3/3/3



GI TRACT IN THIS CLIP ?



SEVERE EPIGASTRALGIA



23M, RLQ PAIN 3 D



C80



84%

MI

0.8

TIS

0.2



6.6



Patient



Auto Gain



Gen



Clip

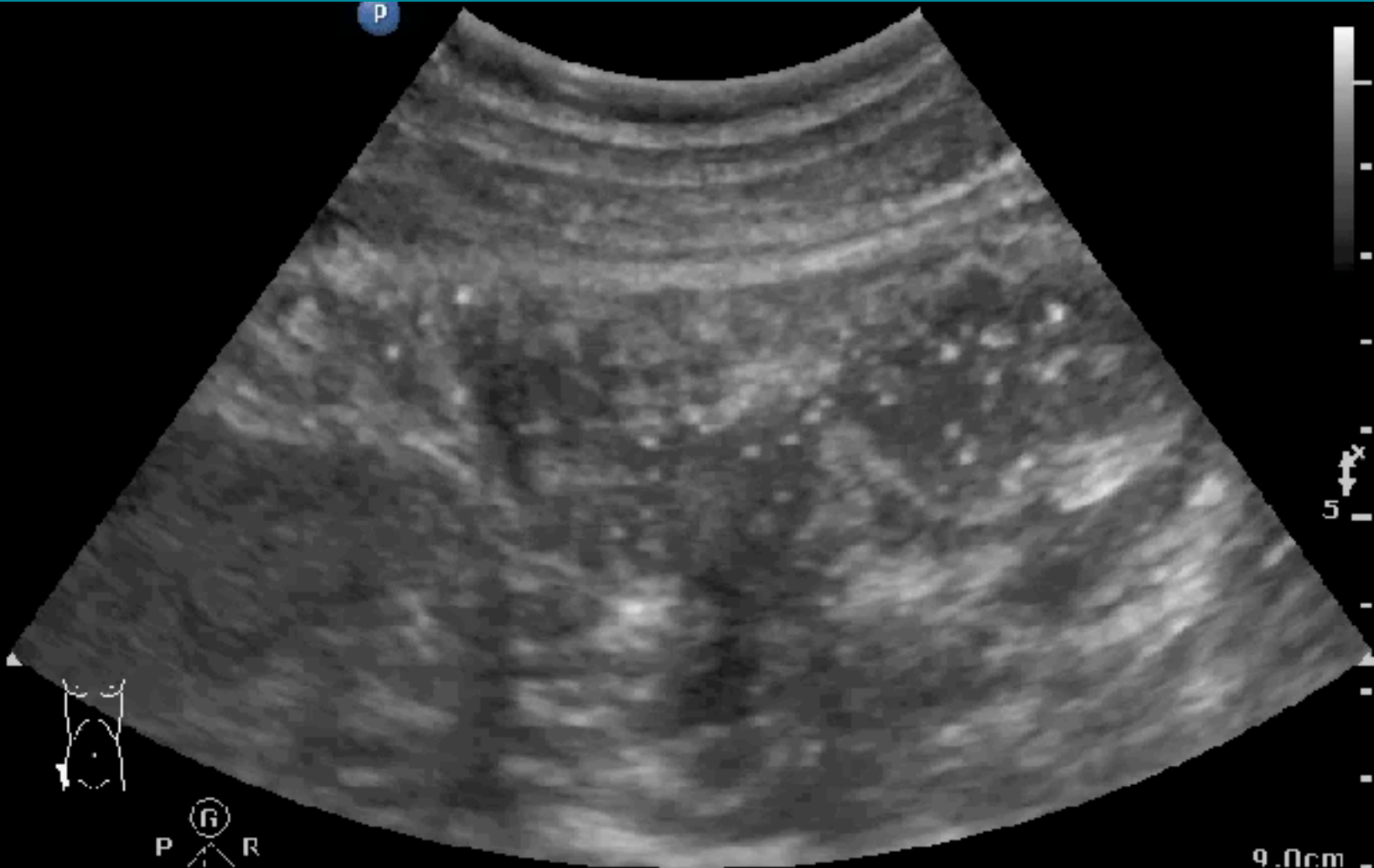


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FINDINGS OF THIS CLIP

Abd Gen
C5-1
47 Hz
9.0cm

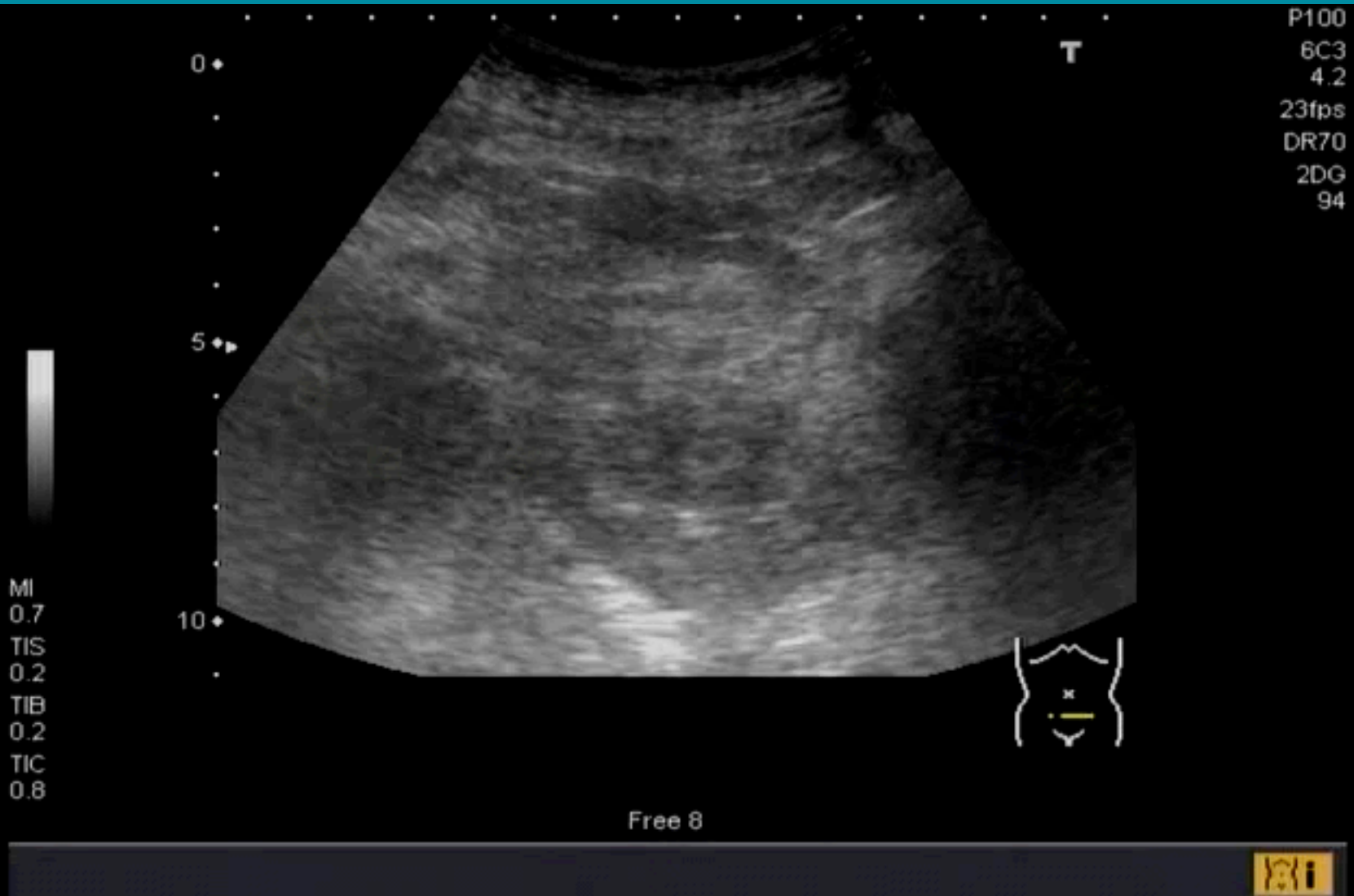
2D
HGen
Gn 68
C. 56
3/3/3



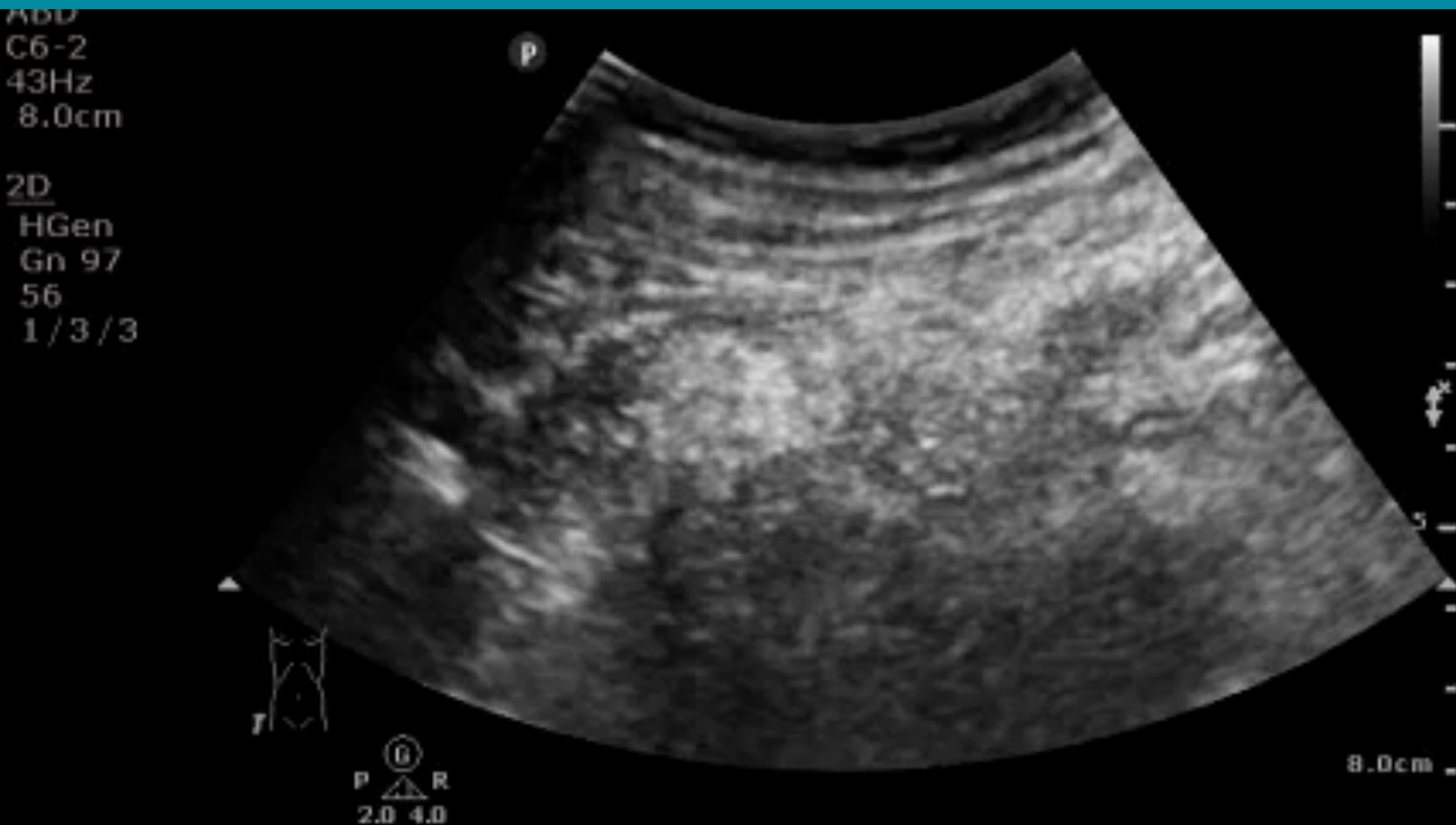
P R
1.8 3.6

9.0cm

FINDINGS OF THIS CLIP



GI TRACT & DIAGNOSIS



GI TRACT & DIAGNOSIS

Superficial
L12-3
19 Hz
6.0cm

2D
HGen
Gn 60
C 43
4/3/2



P
G
R
4.4 8.8



6.0cm

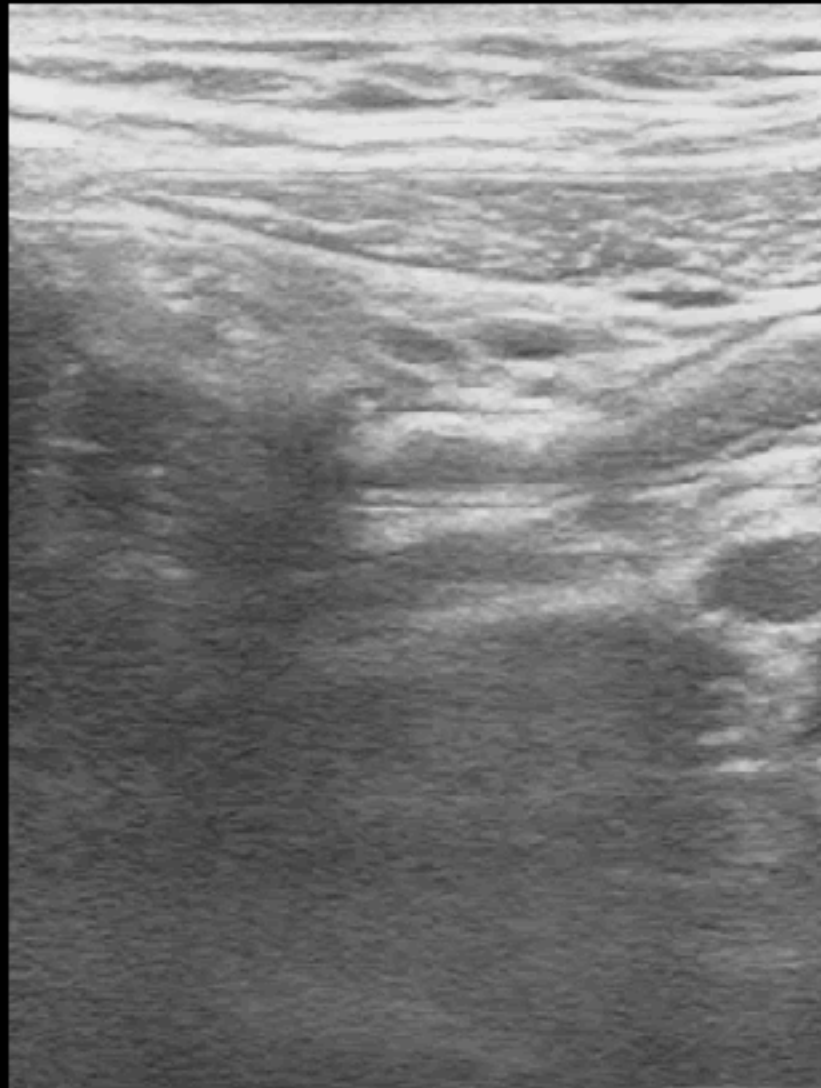
APPENDICITIS ?

Arterial
L12-3
34 Hz
5.0cm

2D
HGen
Gn 50
C. 41
3/3/2

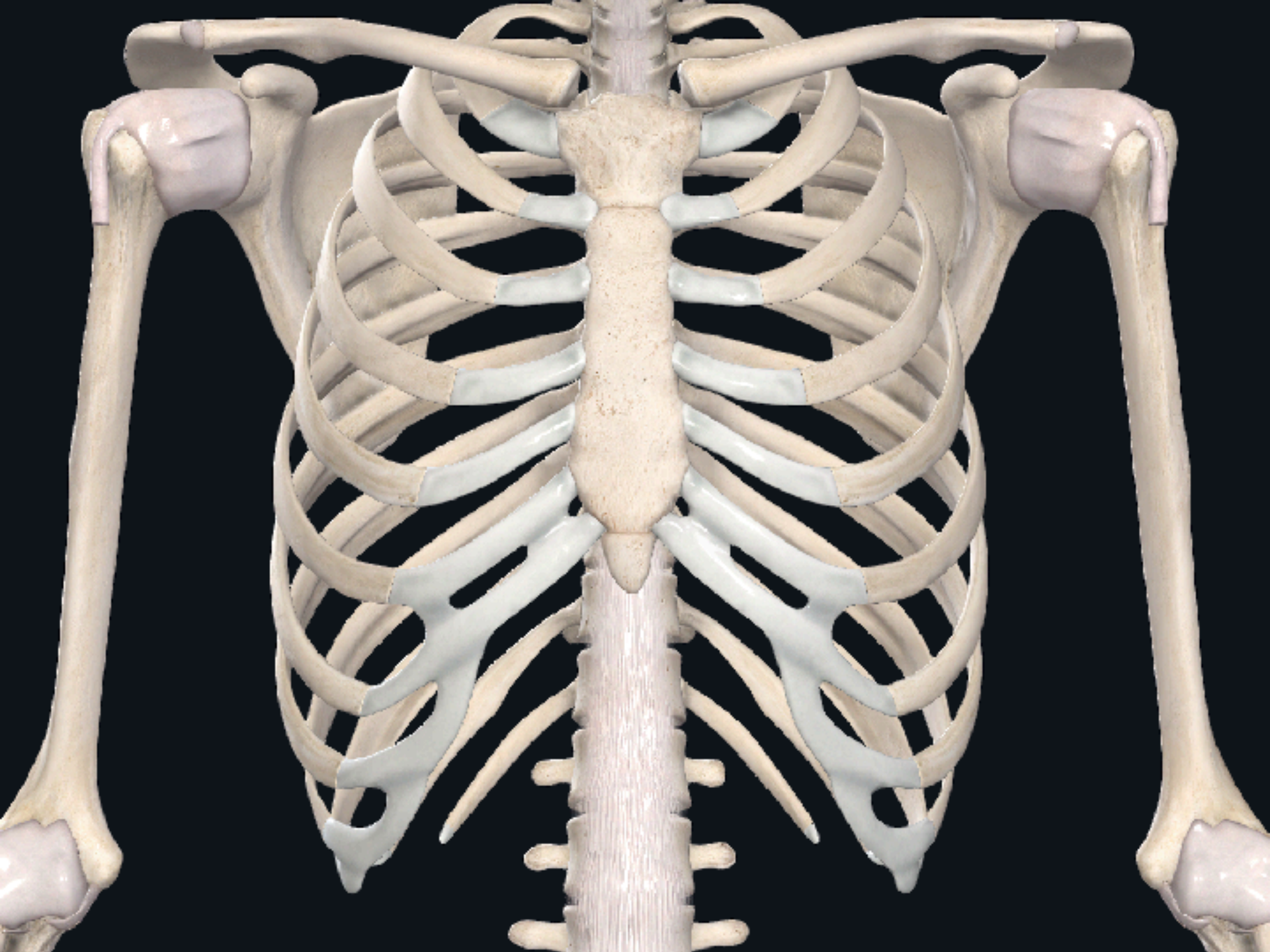


P R
1.1 8.8



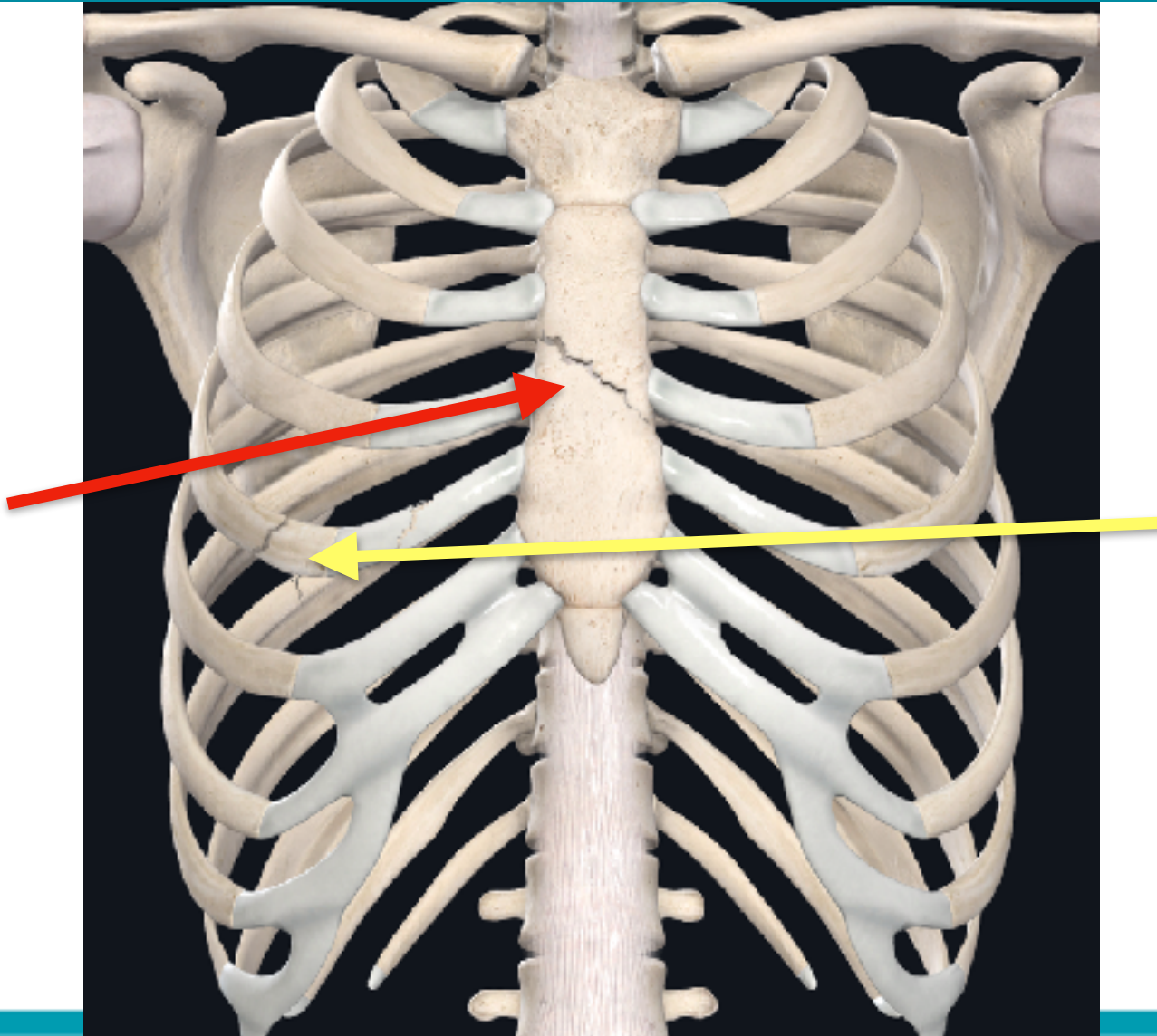
5.0cm





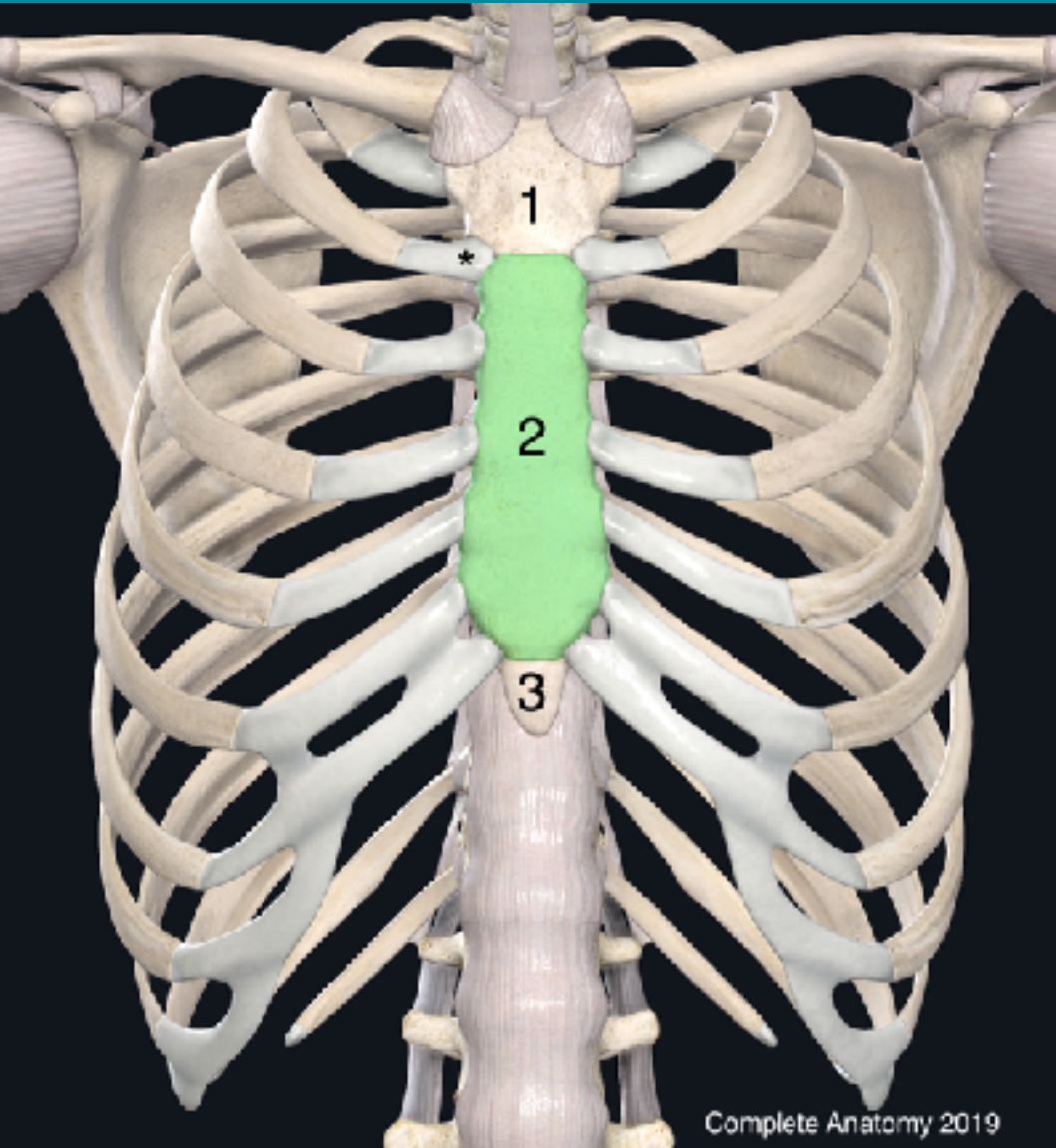
POCUS FOR FRACTURE

胸
骨
骨
折



肋
骨
骨
折

STERNUM



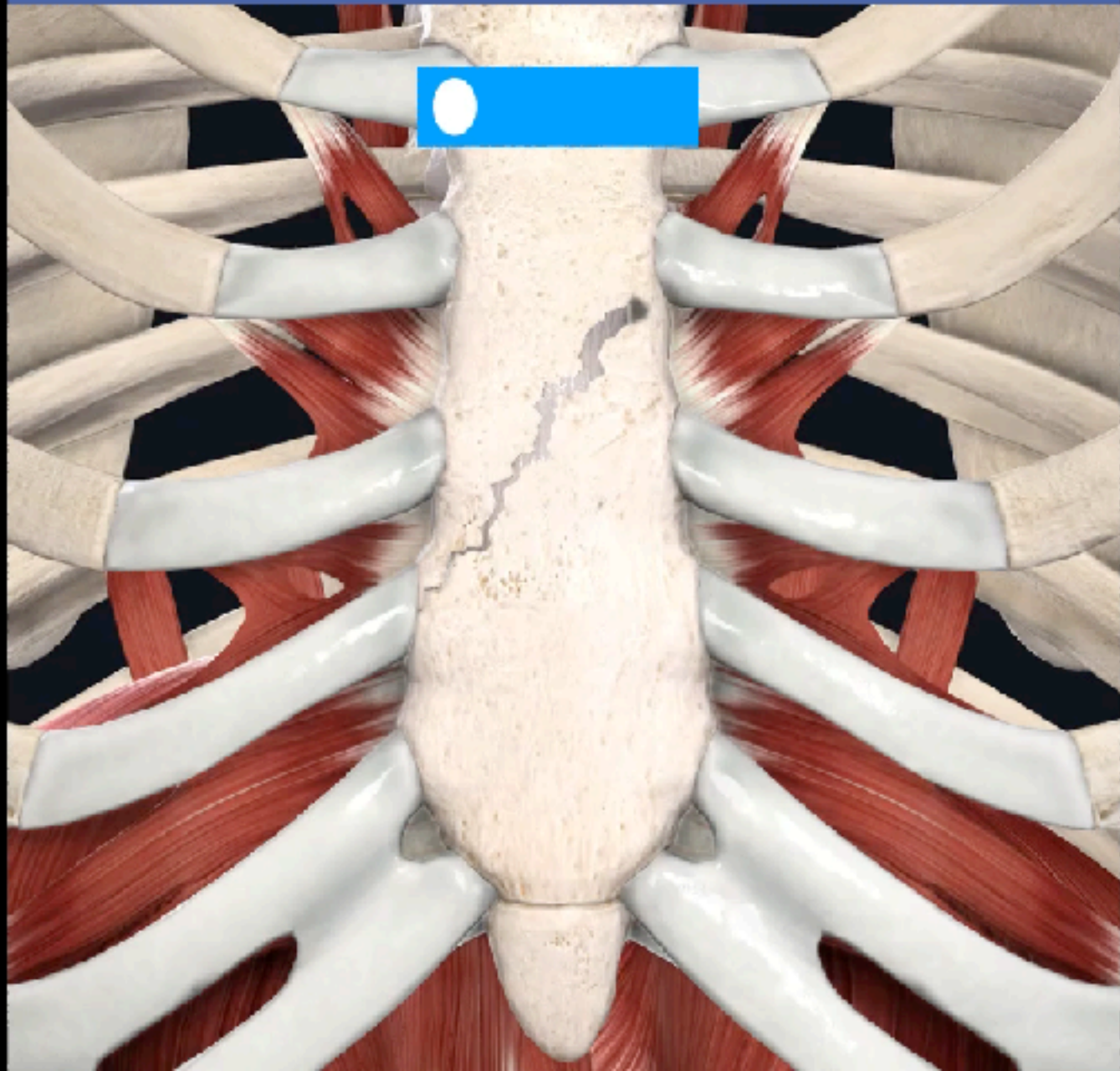
胸骨柄

胸骨體

劍突

橫向掃描開始

1



STERNUM

PHILIPS TemporaryID-20190311170310
19-03-11-170310

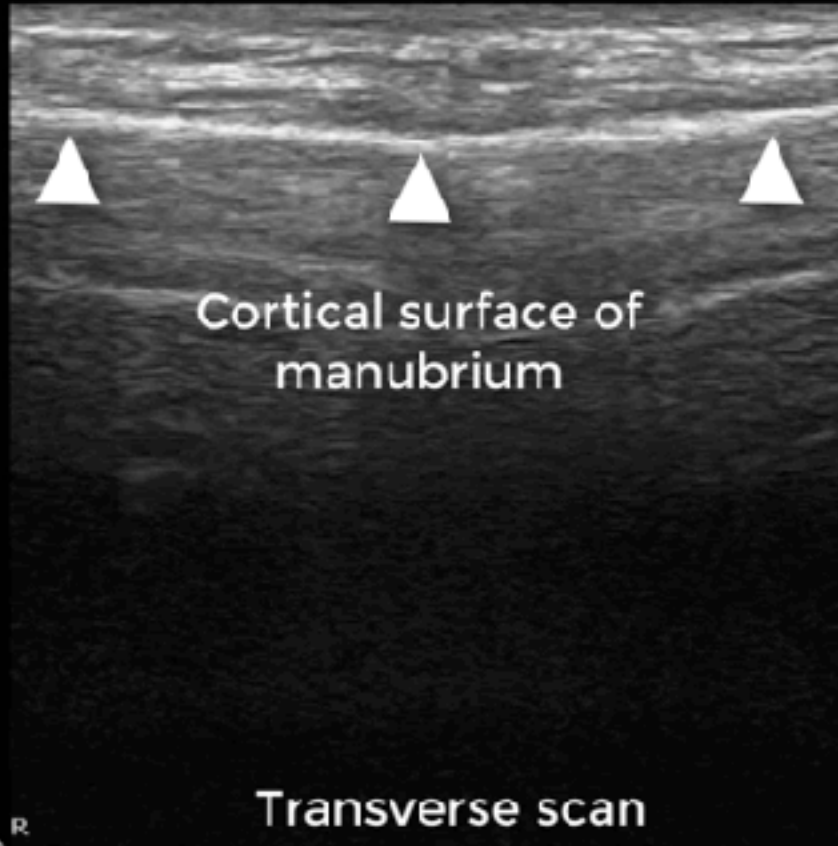
SKH ER

MI 0.9 3/11/2019
TIS 0.2 5:39:49 PM

MSK Gen
L12-4
42 Hz
3.5cm

2D
Res
Gn 100
58
4/3/4

Right



Left



G
4.0 12.0 R

3.5cm

STERNUM (橫向掃描)

PHILIPS TemporaryID-20190311170310
19-03-11-170310

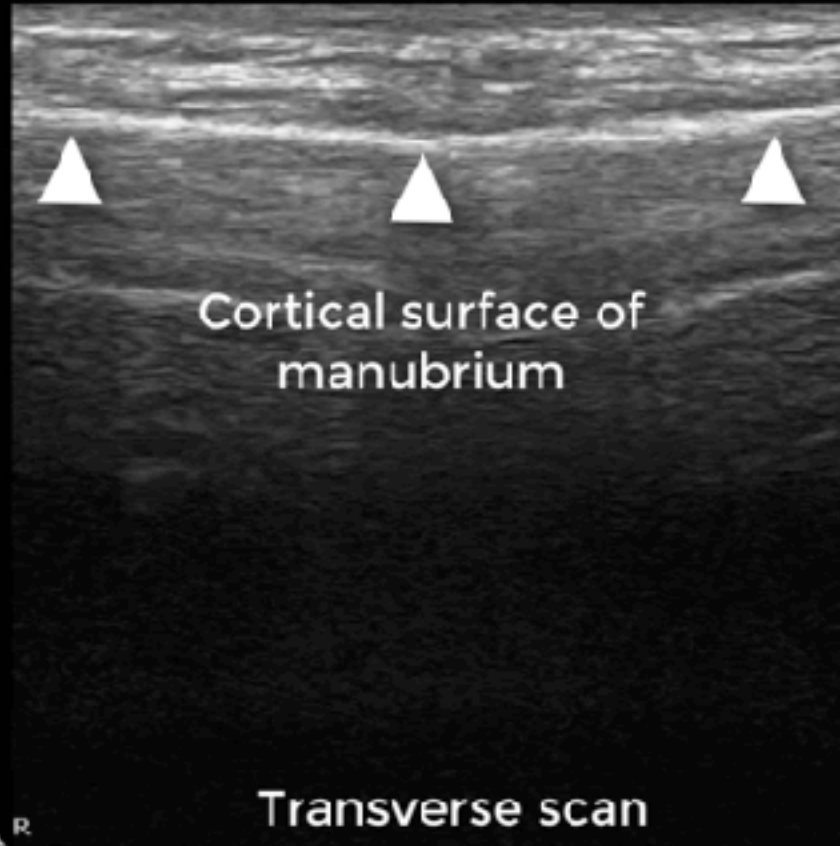
SKH ER

MI 0.9 3/11/2019
TIS 0.2 5:39:49 PM

MSK Gen
L12-4
42 Hz
3.5cm

2D
Res
Gn 100
58
4/3/4

Right



Left



G
P R
4.0 12.0

3.5cm

STERNUM (縱向掃描)

19-03-11-170310

SKH ER

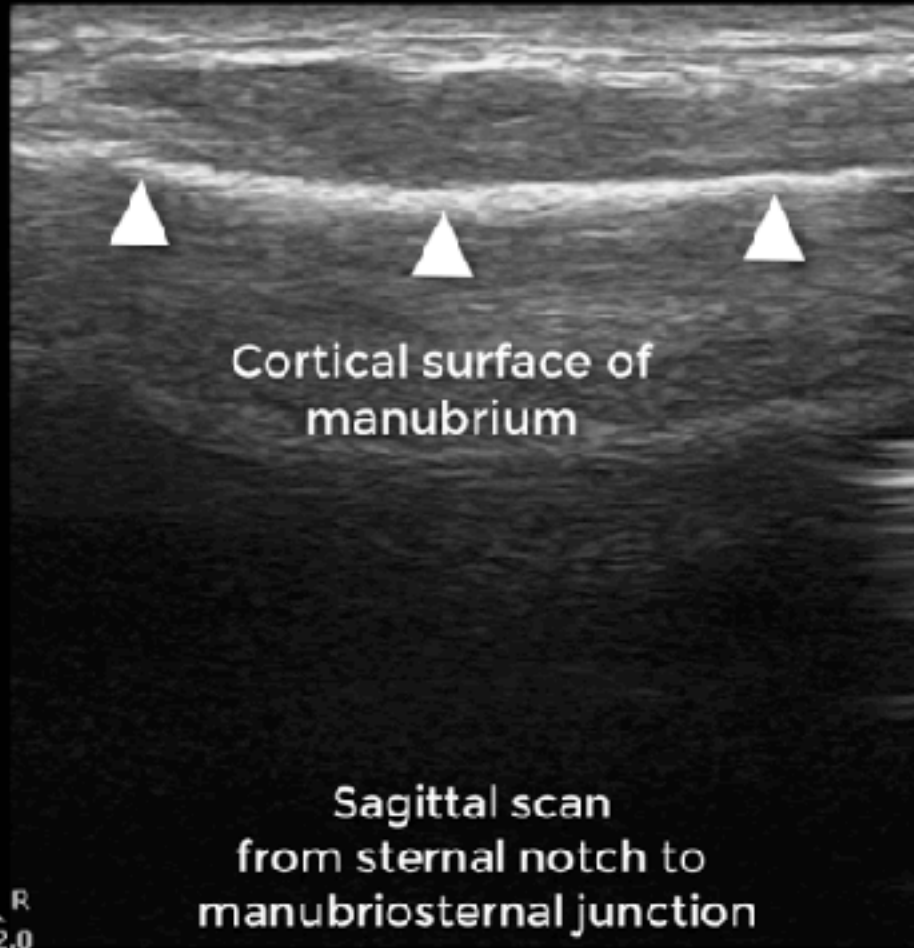
TIS 0.2

5:40:29 PM

MSK Gen
L12-4
42 Hz
3.5cm

2D
Res
Gn 100
58
4/3/4

P



Cephalad

Caudal



G
P R
4.0 12.0

STERNUM TO 2ND RIB

19-03-11-170310

SKH ER

TIS 0.2

5:40:55 PM

MSK Gen
L12-4
42 Hz
3.5cm

2D
Res
Gn 100
58
4/3/4

Cephalad

Cortical surface of
manubrium

Caudal



P G R
4.0 12.0

Sagittal scan on
manubriosternal junction to right side

3.5cm

86歲老太太撞到前胸，好痛喔！！



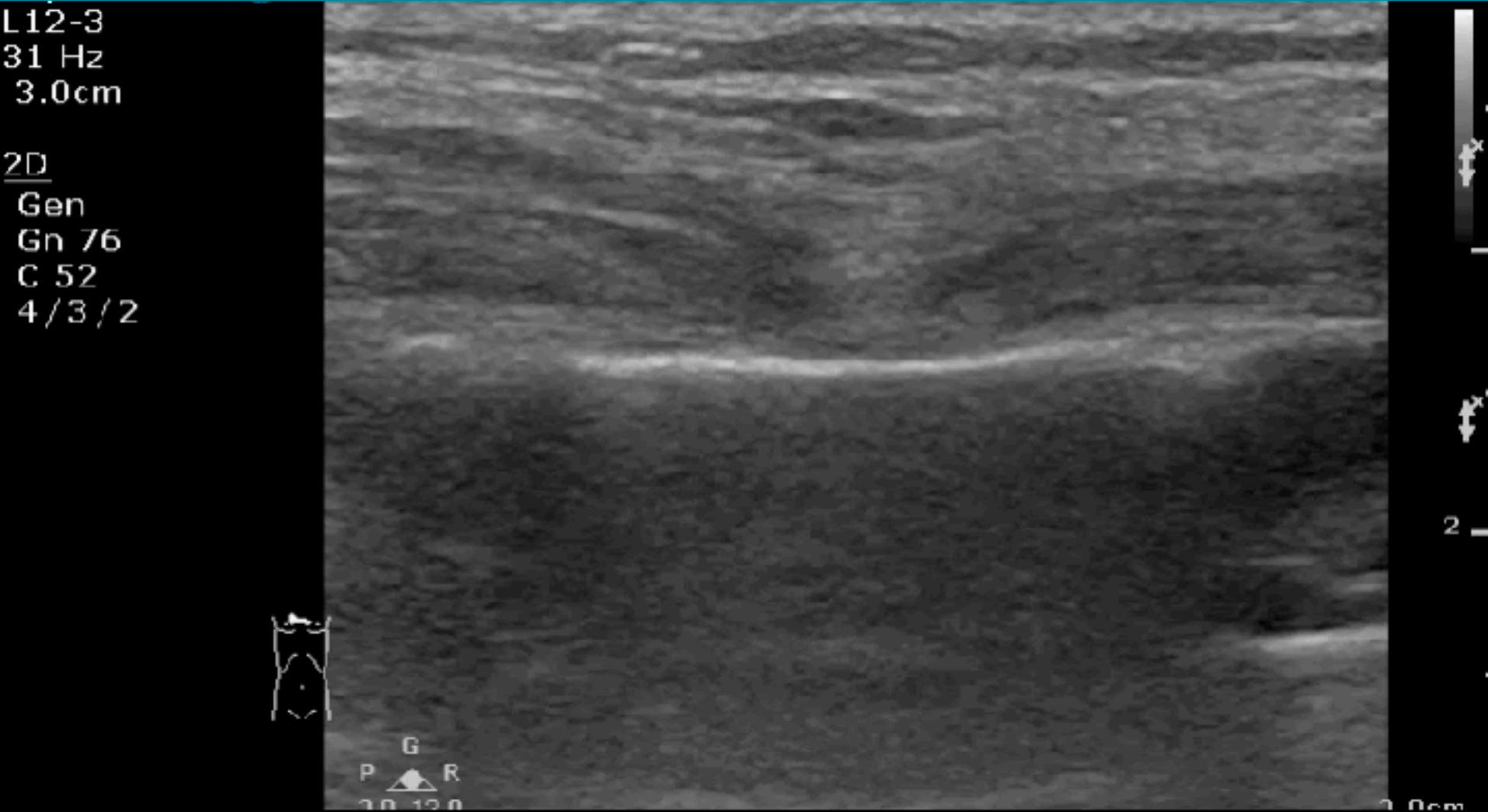
STERNUM (橫向掃描-高低差)



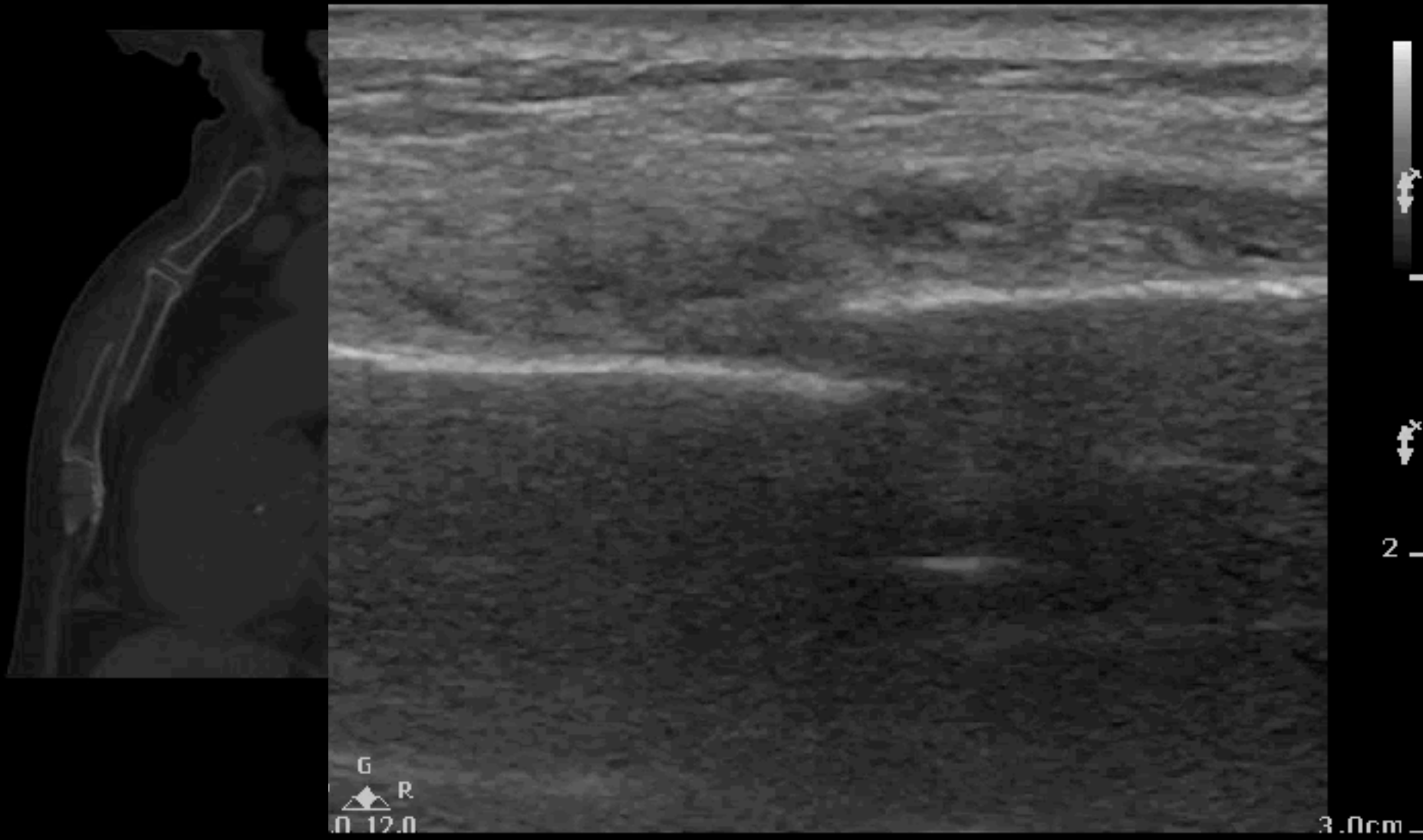
G
P R
3.0 12.0

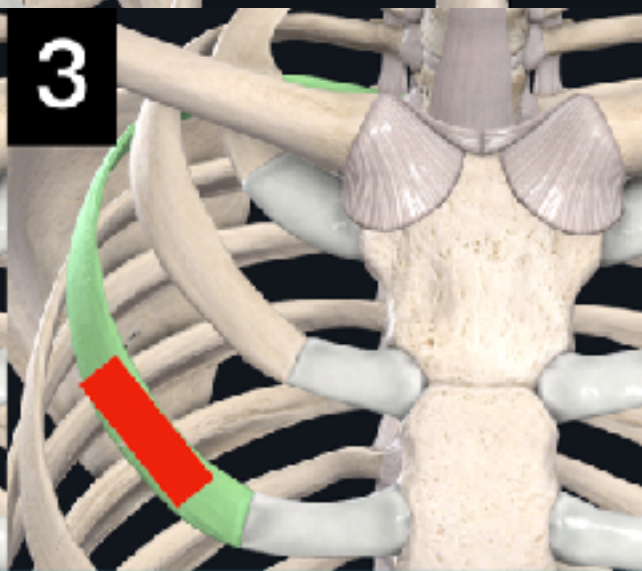
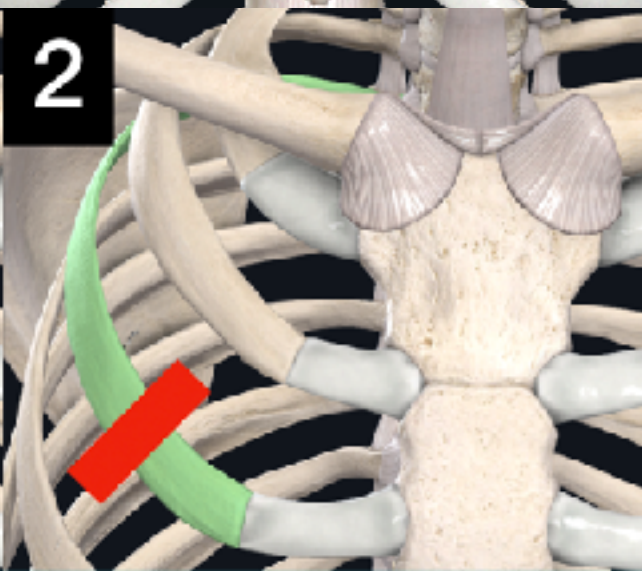
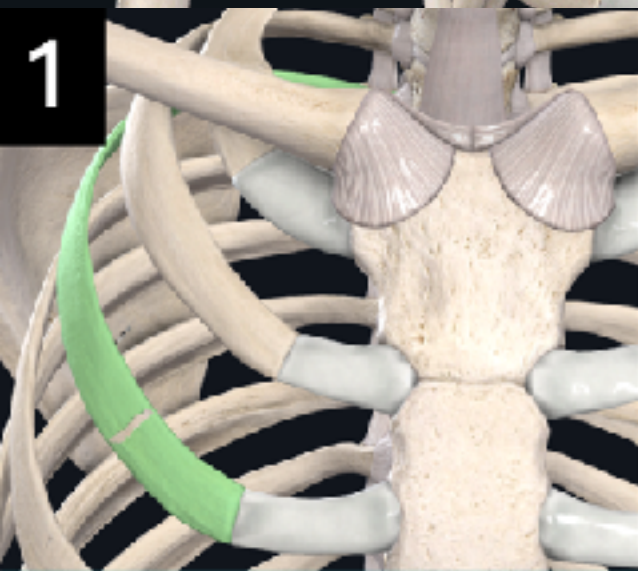
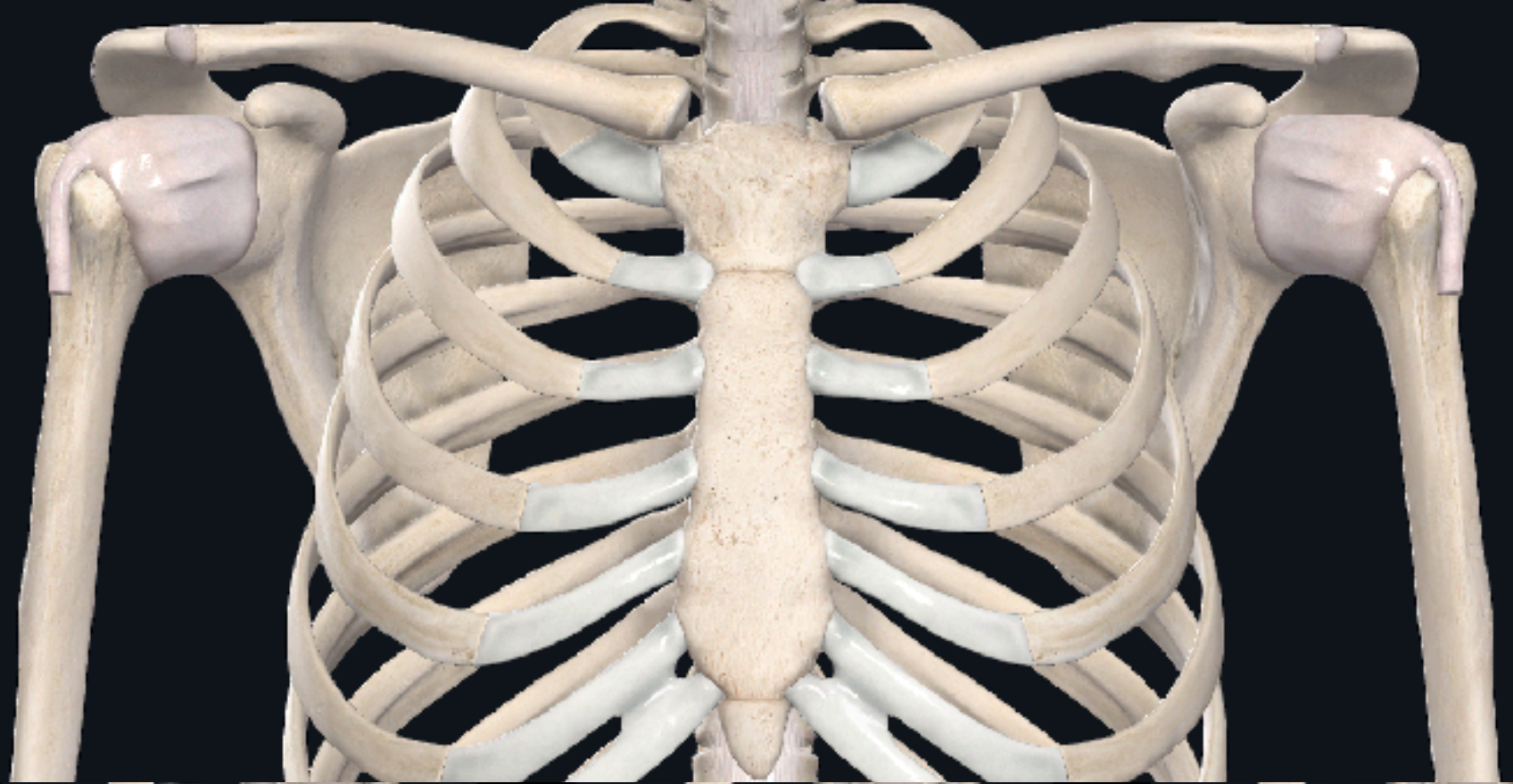
3.0cm

STERNUM (橫向轉縱向)

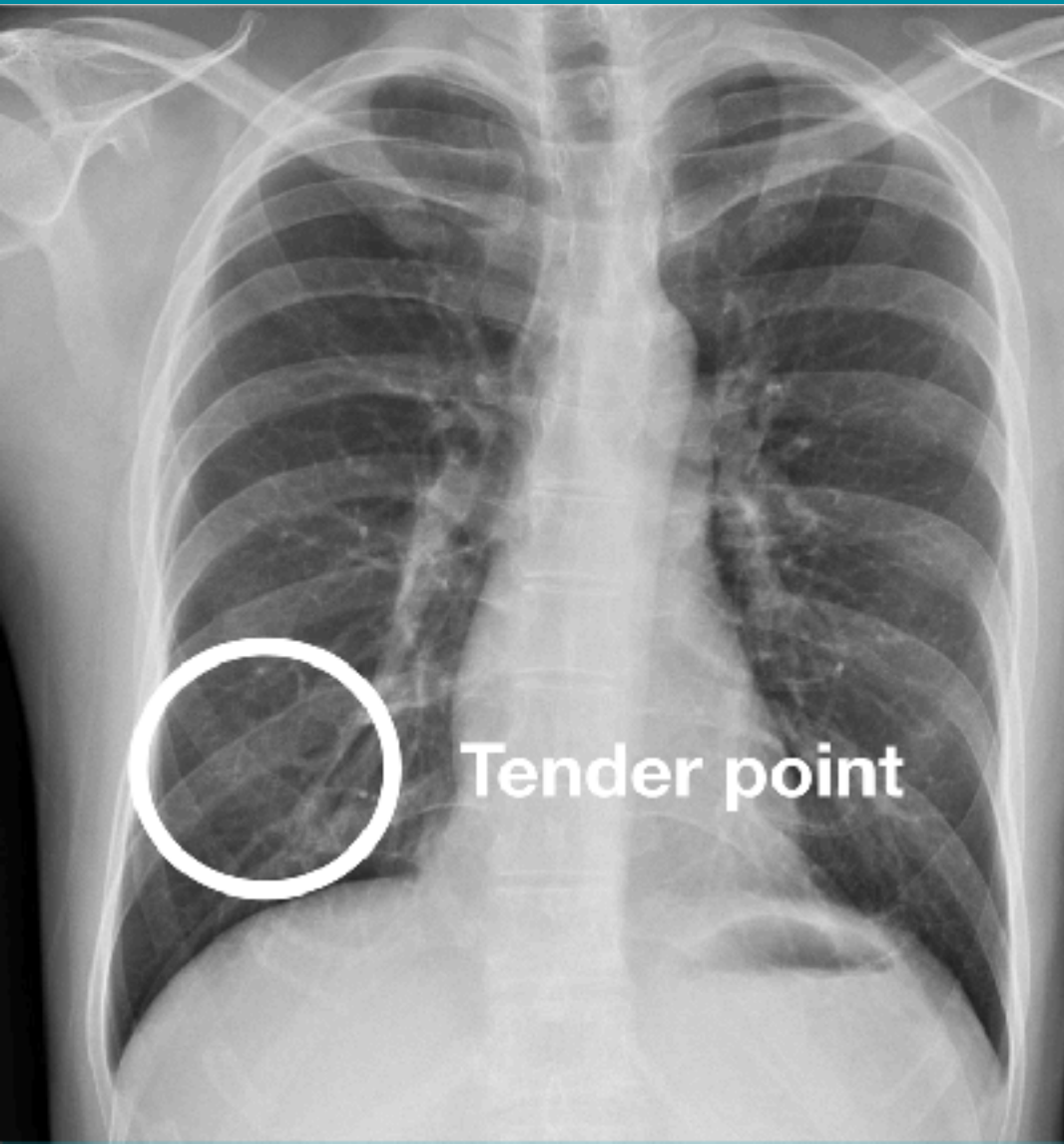


STERNUM (縱向掃描-不連續/血腫)





35歲男性摔車滑倒受傷後胸痛，X光沒看到骨折咗



RIB (橫向掃描-高低差)

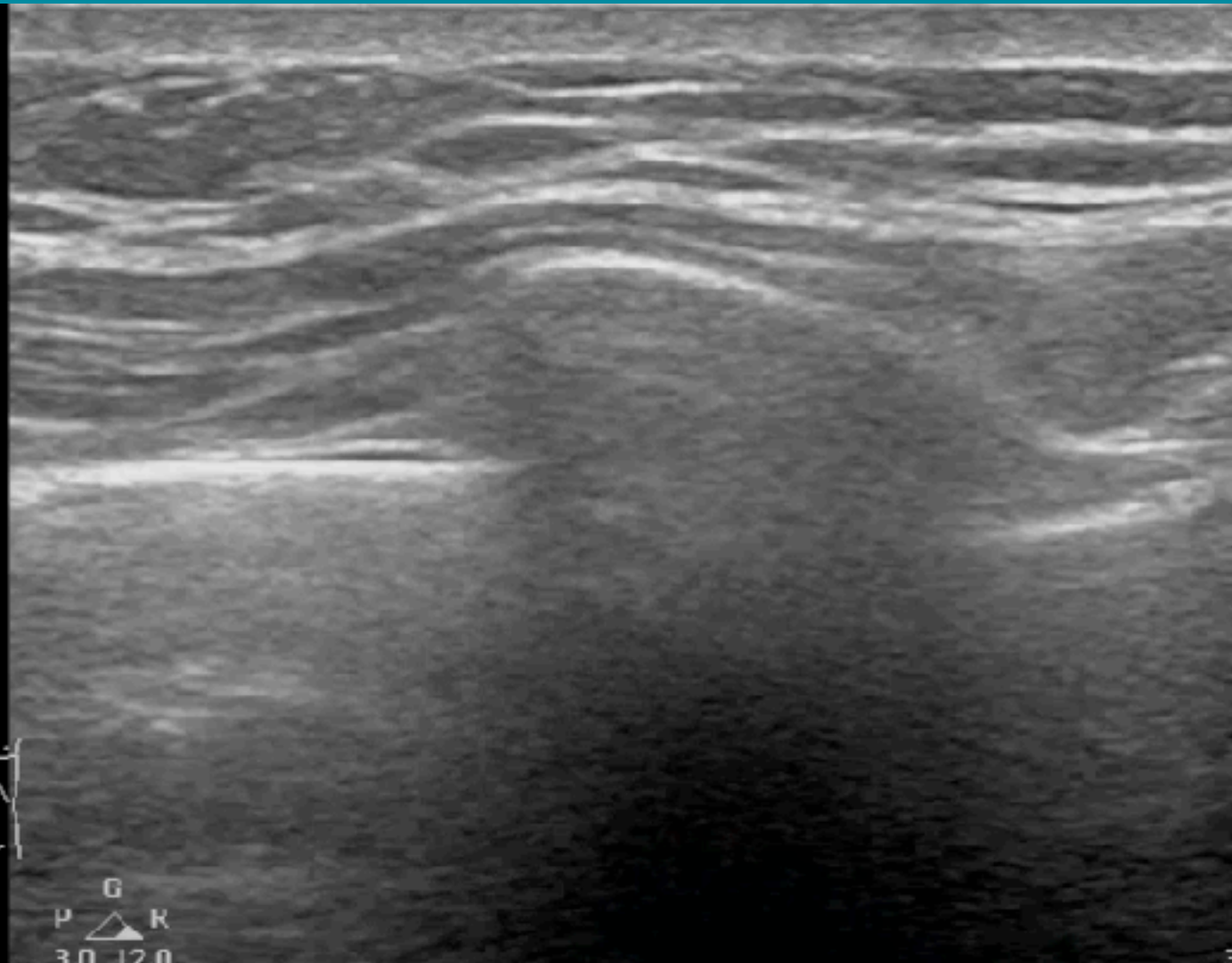
Superficial
L12-3
46 Hz
3.0cm

2D
Res
Gn 96
C 56
3/2/1



G
P \triangle R
3.0 12.0

3.0cm



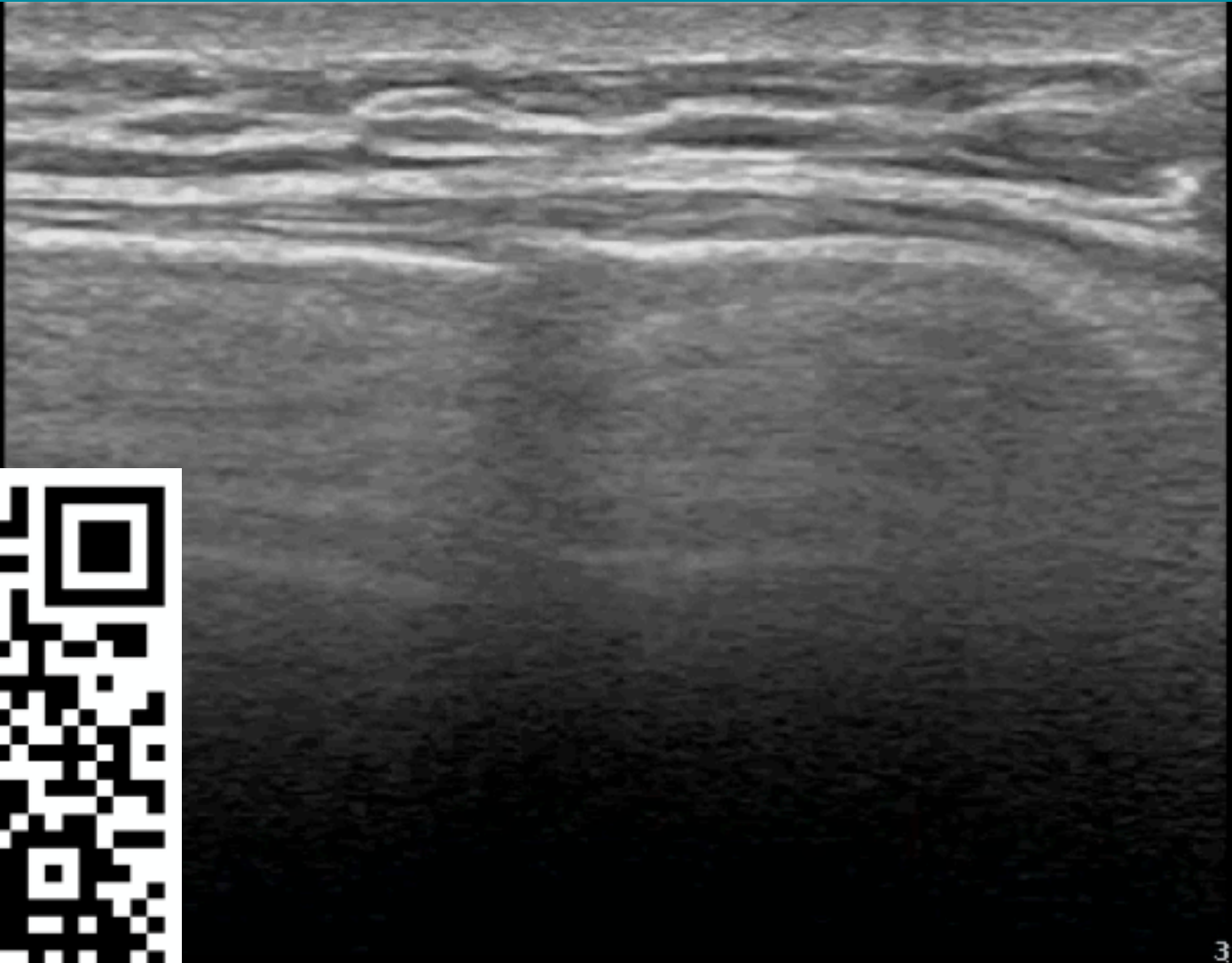
2

RIB (縱向掃描-不連續/血腫)

Superficial
L12-3
46 Hz
3.0cm

2D

Res
Gn 96
C 56
3/2/1

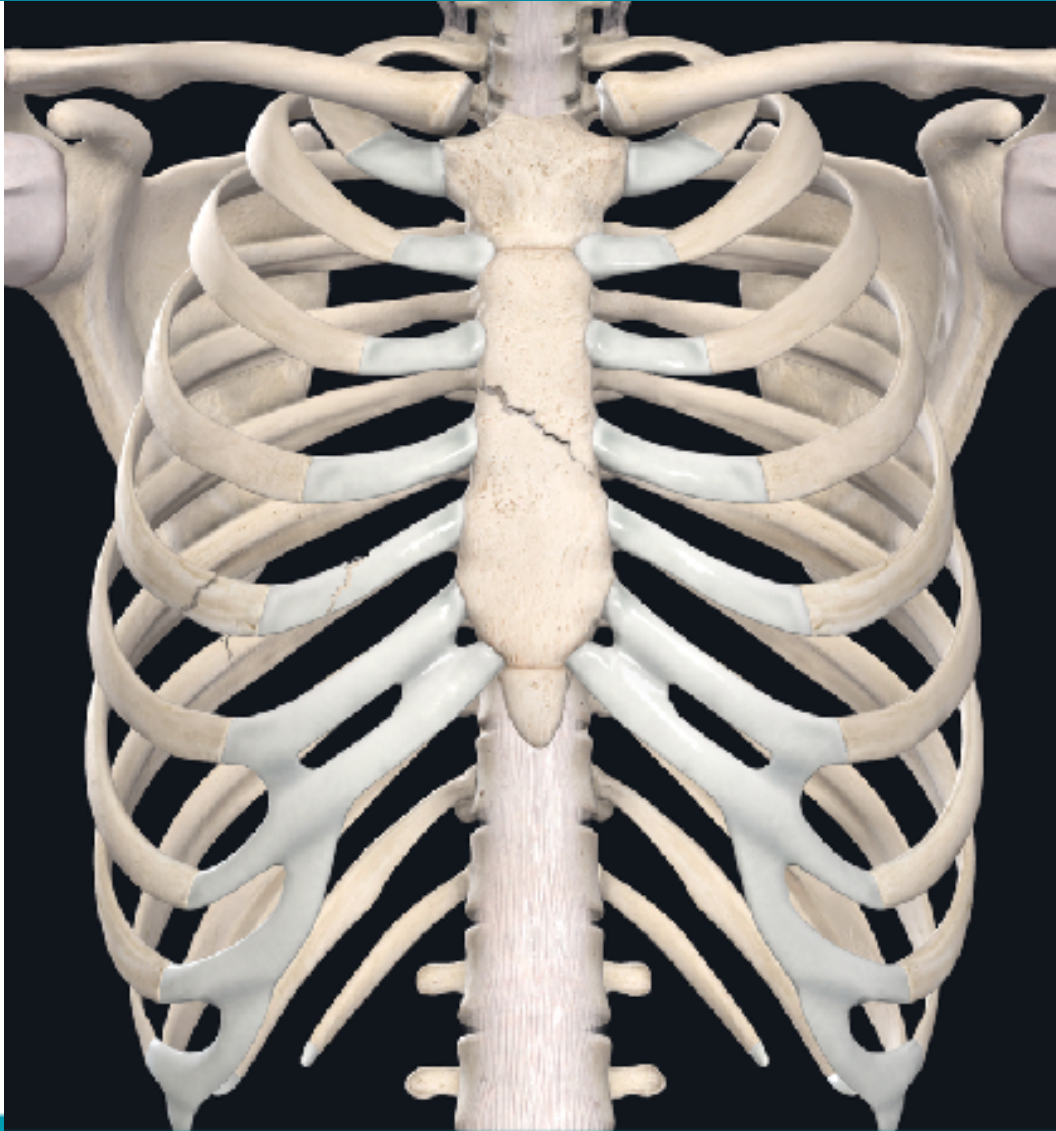


2

3.0cm



骨折診斷三要點



高低差

不連續

有血腫

75歲男性，被人打，右側胸痛 CXR & RIB: NO FRACTURE

Superficial P

L12-4

25Hz

2.5cm

2D

Res

Gn 73

60

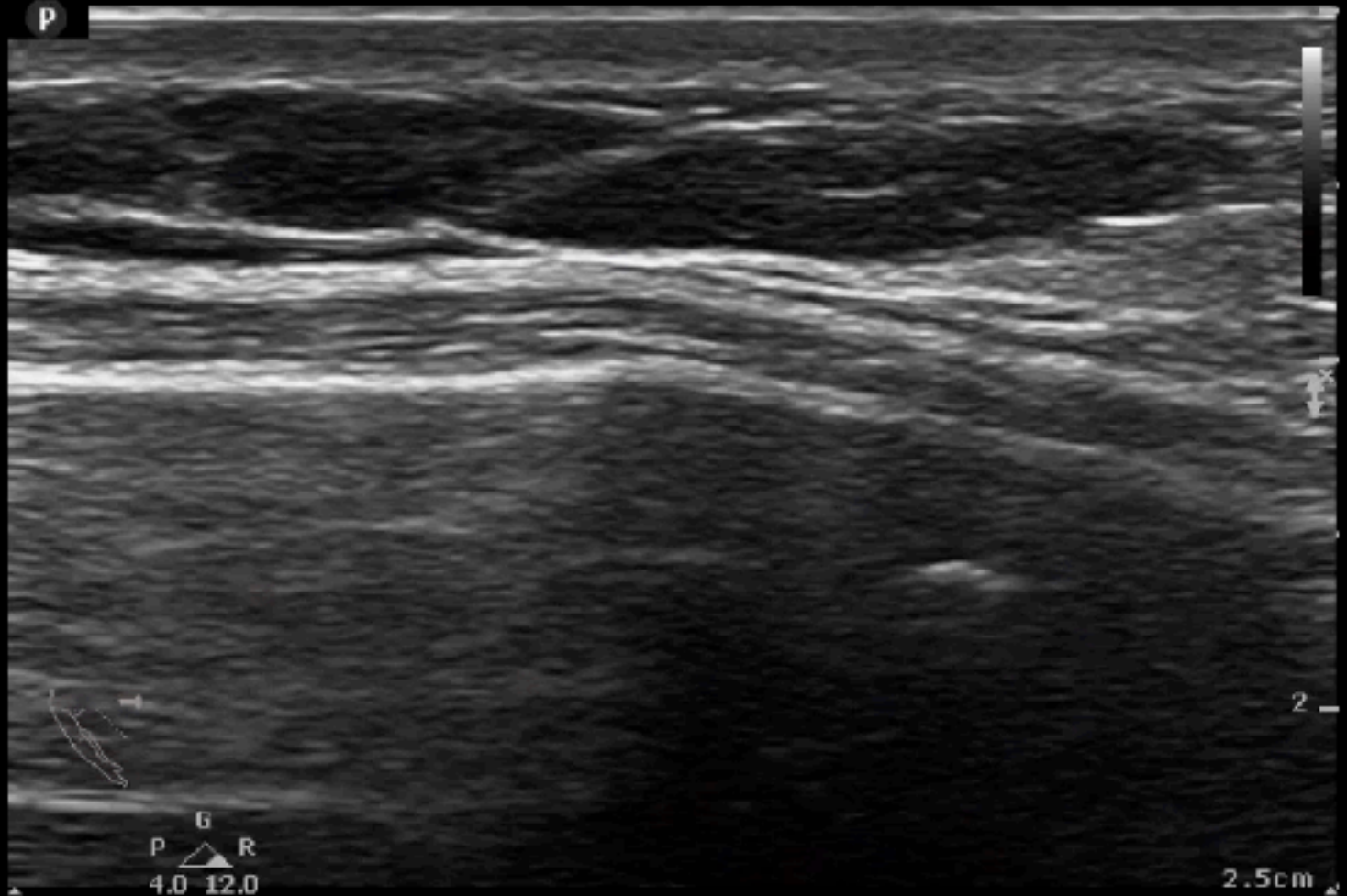
3 / 1 / 3



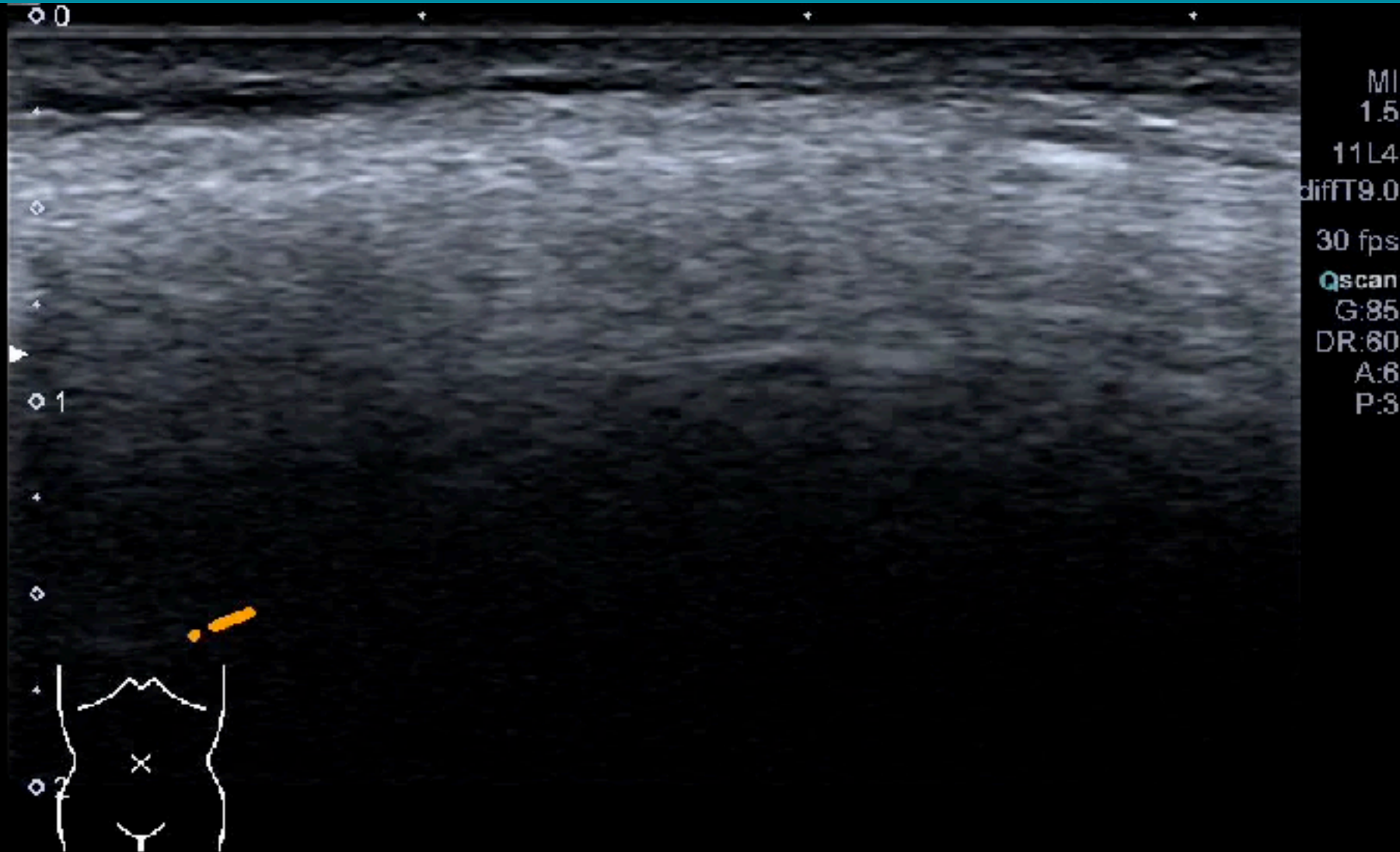
75歲男性，被人打，右側胸痛 ECHO: 8TH RIB FX

Superficial
L12-4
25Hz
2.5cm

2D
Res
Gn 73
60
3 / 1 / 3



45F，昨晚六.七點於公車上煞車 撞到欄杆.現覺左肋疼痛



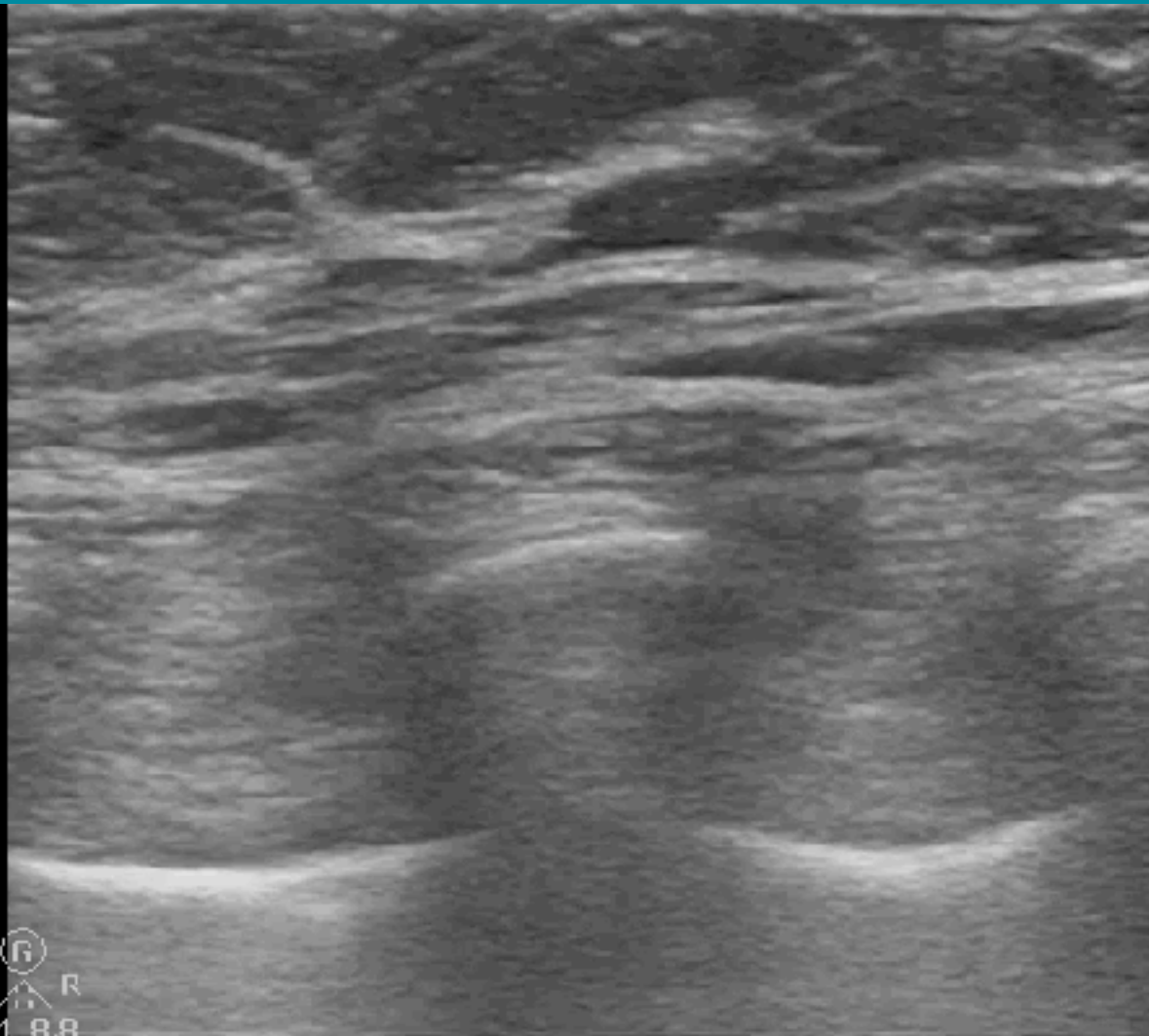
FRACTURE ?

HPG Gen
L12-3
42 Hz
3.5cm

2D
HGen
Gn 74
C. 56
3/3/4



P R
1.1 8.8



3.5cm

HOW MANY FRACTURES ?

Superficial
L12-3
46 Hz
3.0cm

2D
Res
Gn 84
C. 56
3/2/1

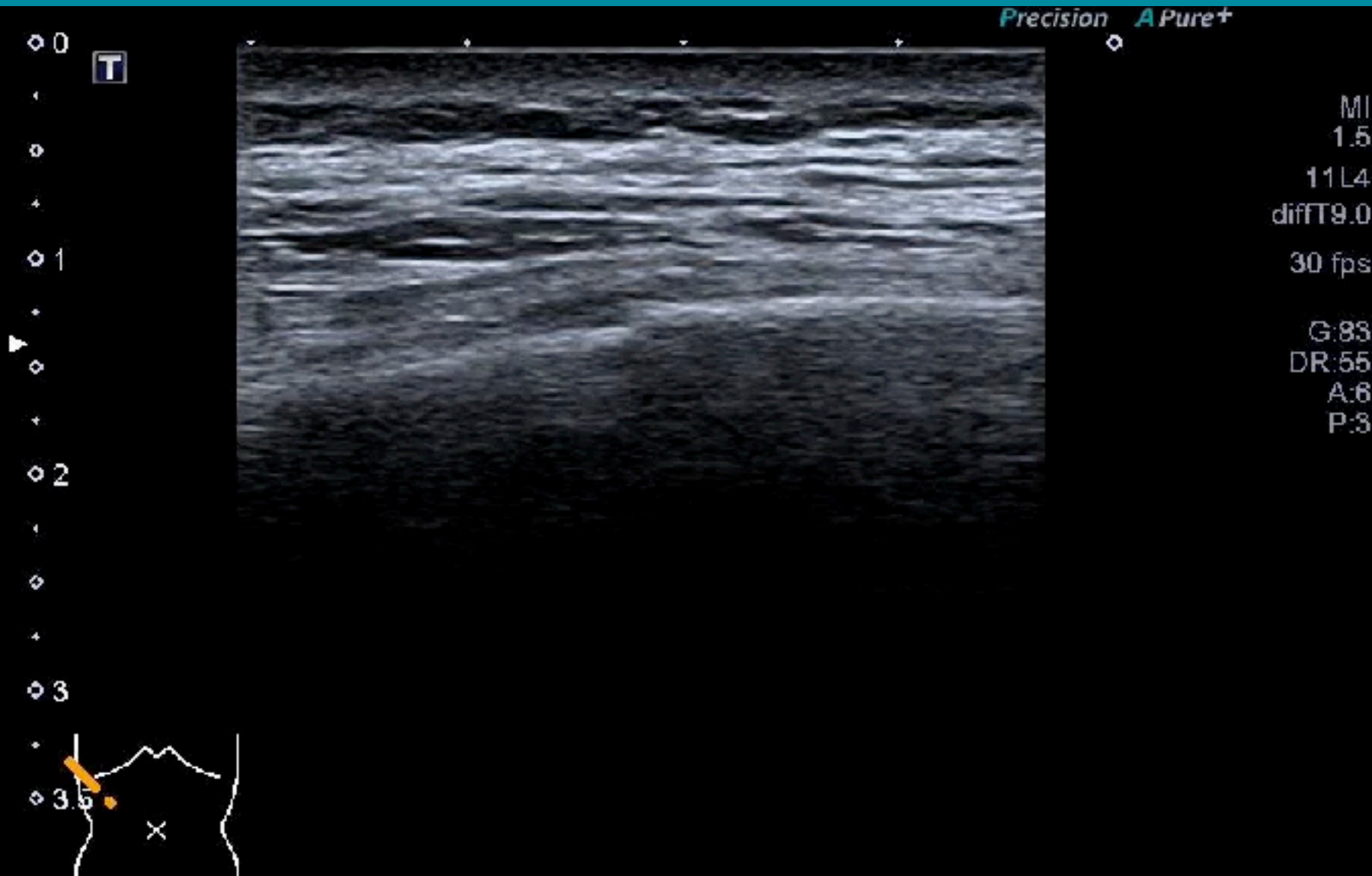
P



2

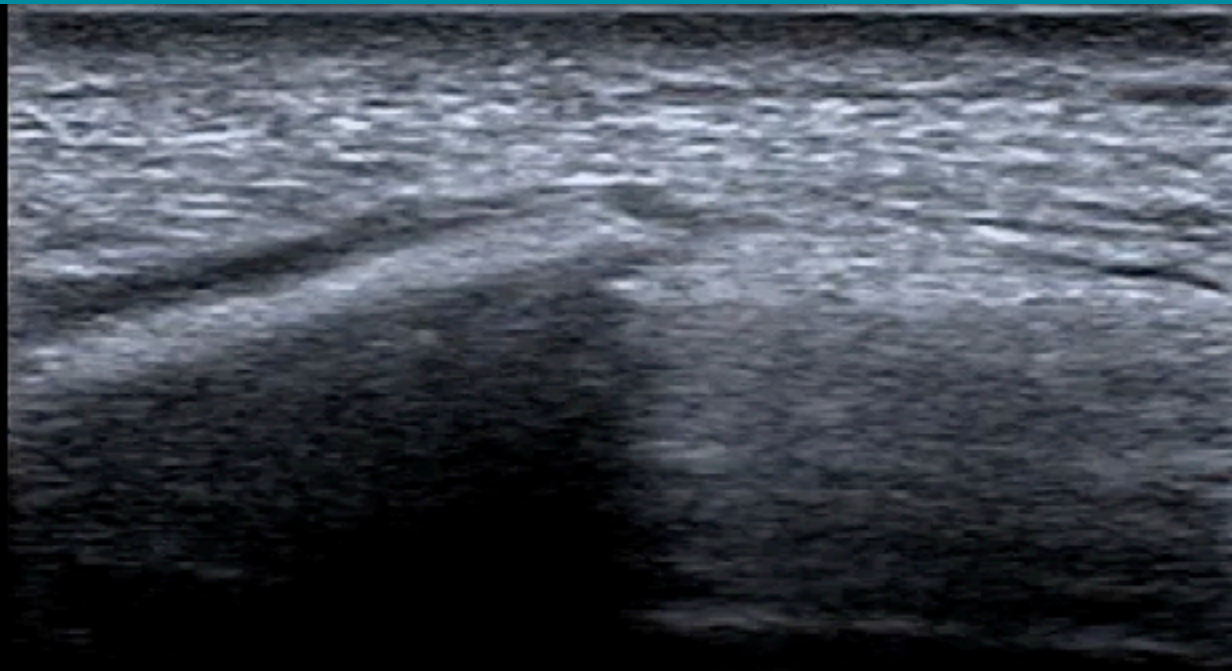
3.0cm

FRACTURE ?



FRACTURE ?

T



MI
1.5
11L4
diffT9.0
30 fps
G:86
DR:60
A:6
P:3

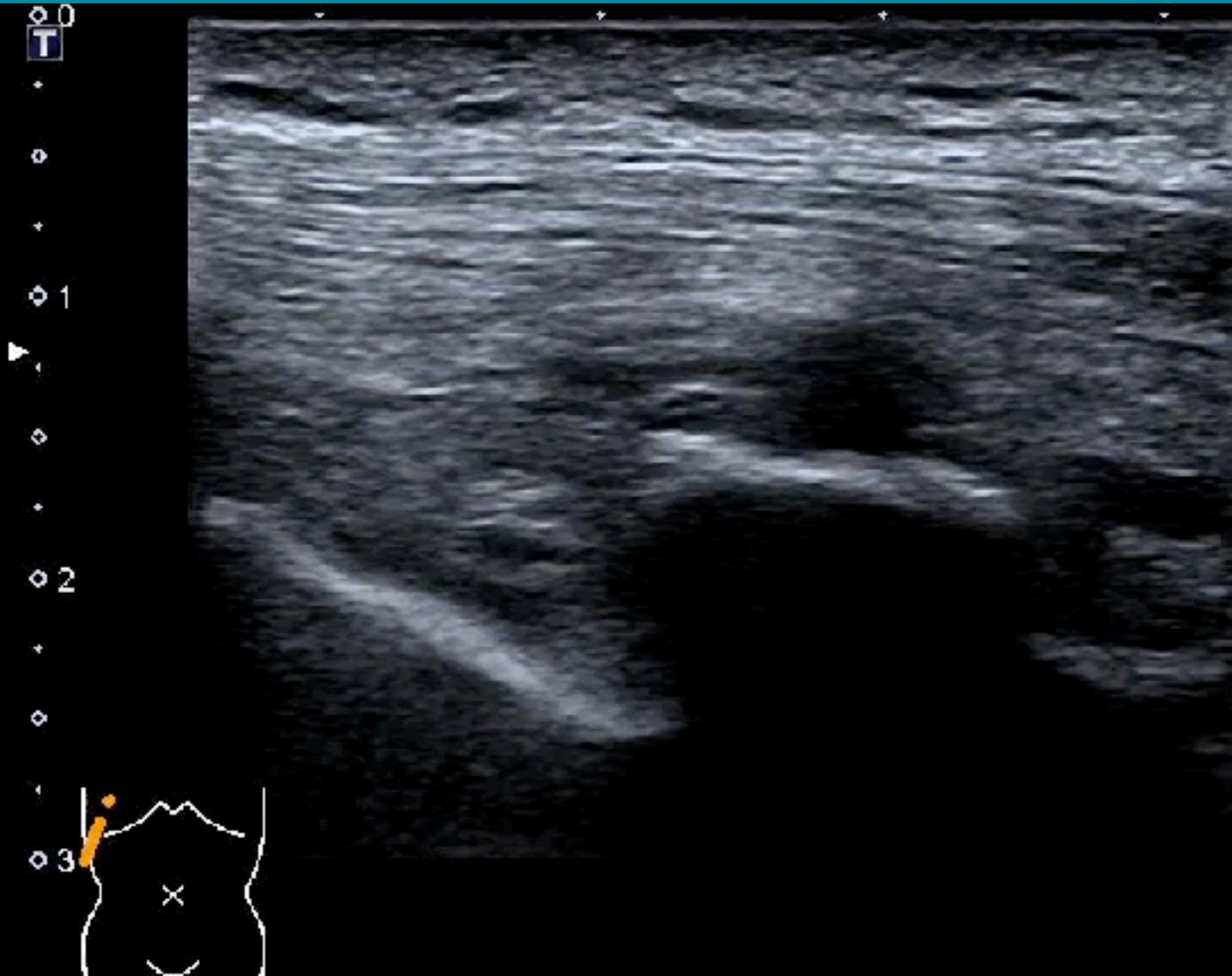
1

2

3

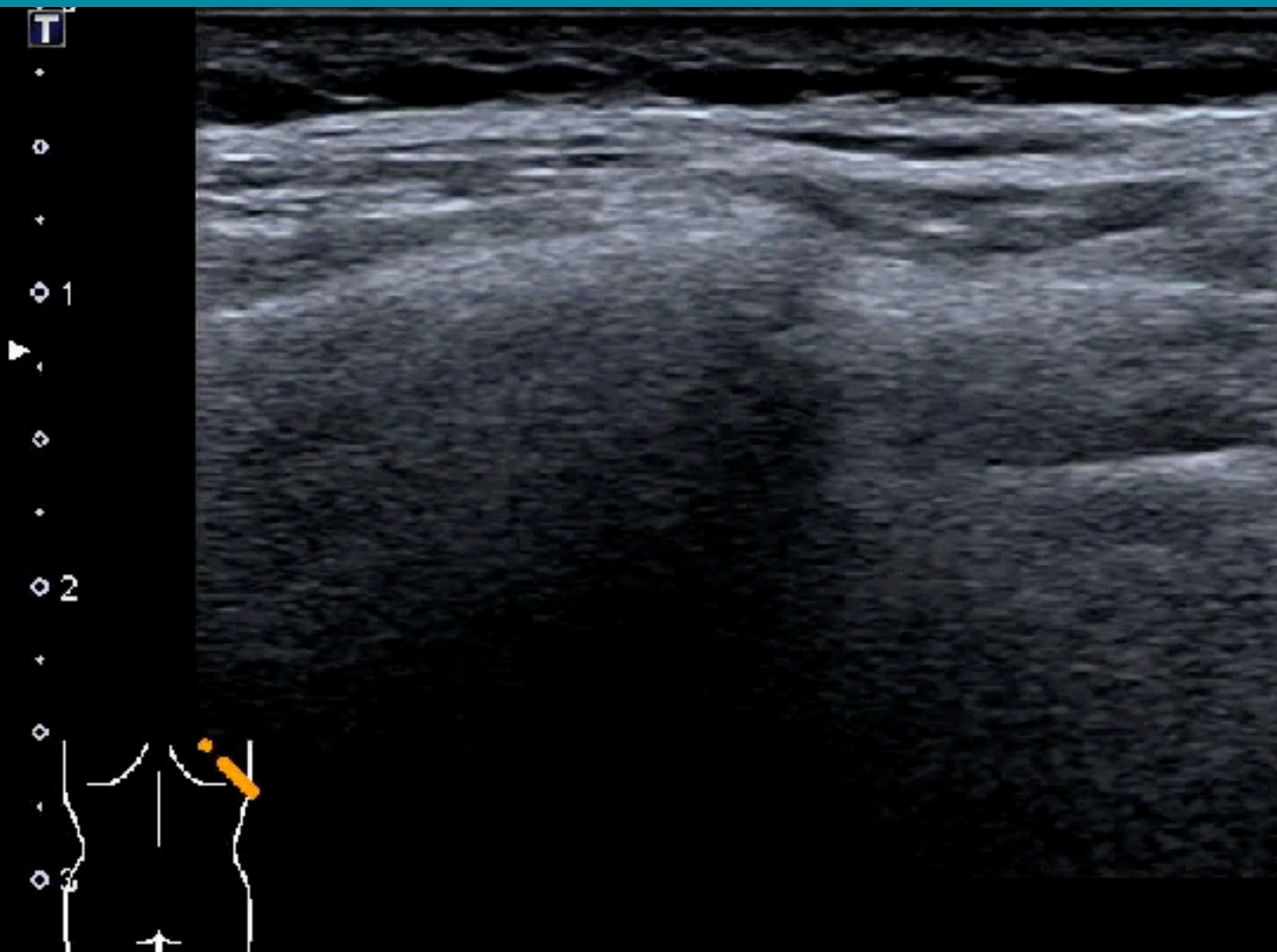


NEW OR OLD FRACTURE ?



MI
1.5
11L4
diffT9.0
30 fps
G:88
DR:55
A:6
P:3

FRACTURE ?



MI
1.5
11L4
diffT9.0
30 fps
Qscan
G:83
DR:55
A:6
P:3

NEW OR OLD FRACTURE ?



FRACTURE ?

MSK Gen
L12-1
44 Hz
3.0cm

P

2D
Res
Gn 62
58
4/3/4



P
R
1.0 12.0

3.0cm

INJURIES ?

GENERIC MD



ABD
- C60
88%
MI
1.0
TIS
0.1

Patient

Auto Gain

Gen

Clip

File



FRACTURE ?

Superficial

P

L12-3

46 Hz

3.0cm

2D

Res

Gn 100

C. 58

3 / 2 / 1



P R
3.0 12.0

3.0cm

FRACTURE ?

Superficial
L12-3
50 Hz
2.5cm

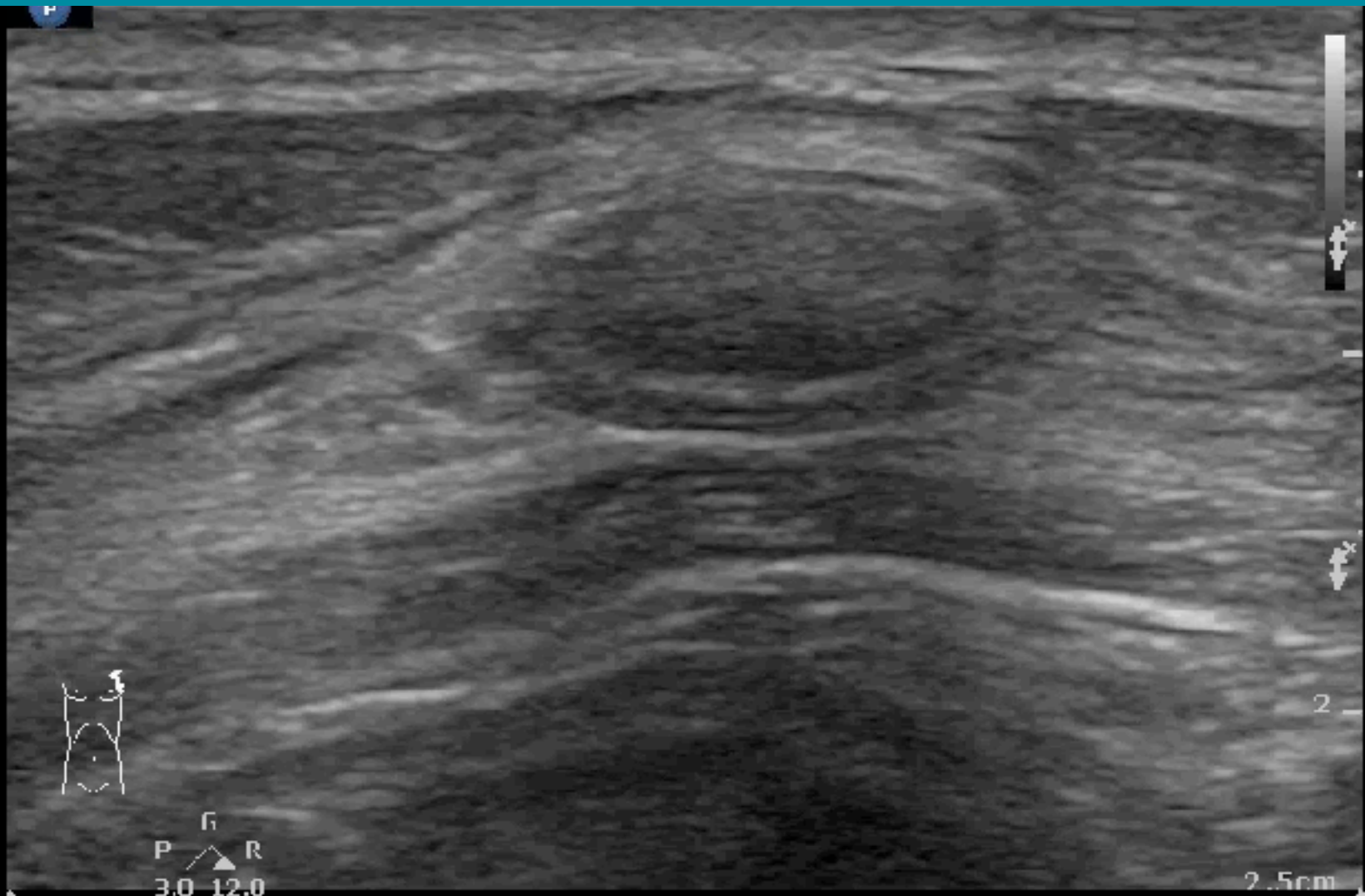
2D
Res
Gn 100
C. 58
3/2/1



FRACTURE ?

Superficial
L12-3
50 Hz
2.5cm

2D
Res
Gn 100
C. 56
3 / 2 / 1



FRACTURE ?



FRACTURE ?

Superficial
L12-3
46 Hz
3.0cm

P

2D
Res
Gn 100
C. 56
3/2/1

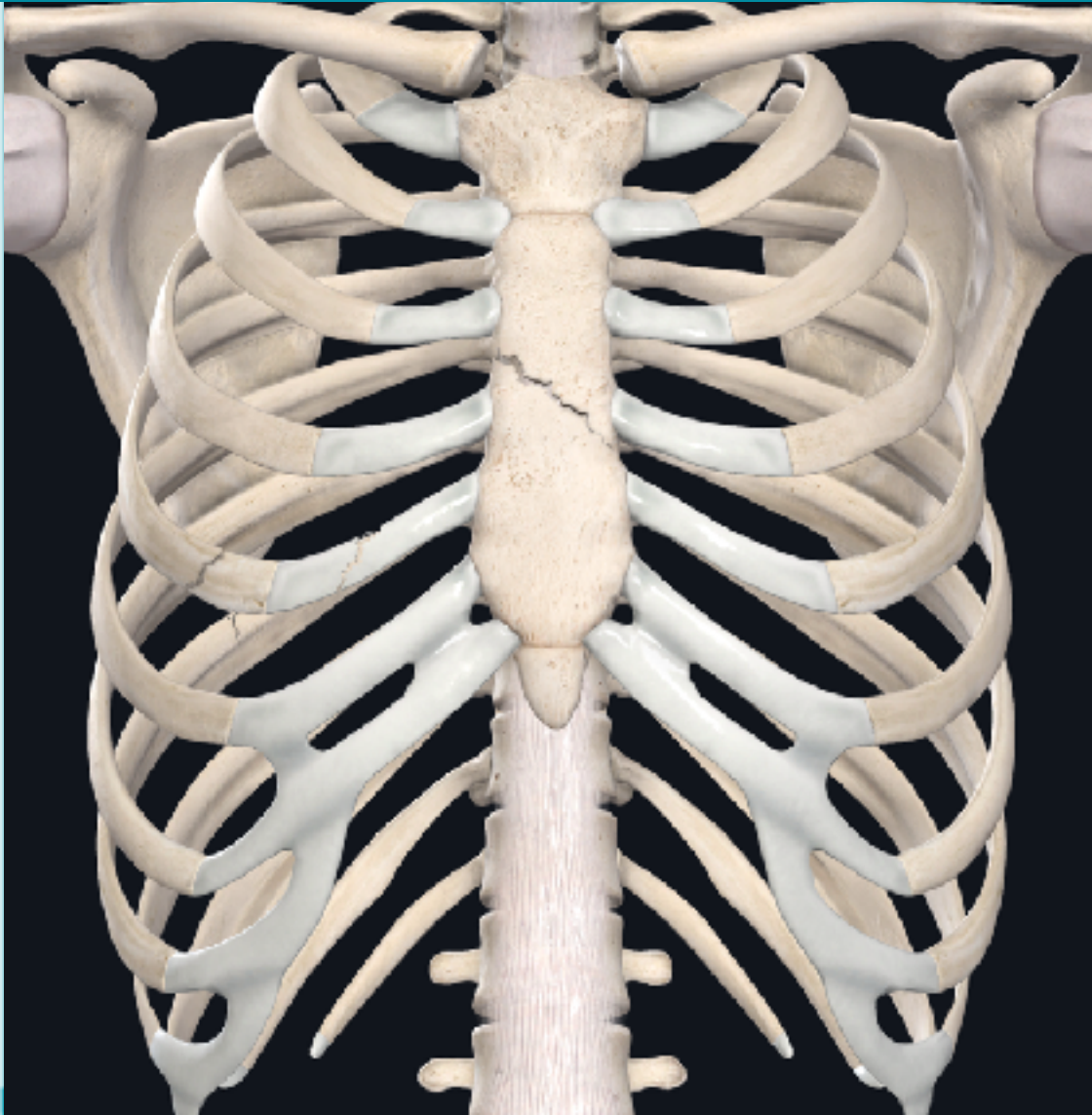


P R
3.0 12.0



3.0cm

ROLE OF POCUS



Sternal fracture

Rib fracture

Cartilage fracture

Separation