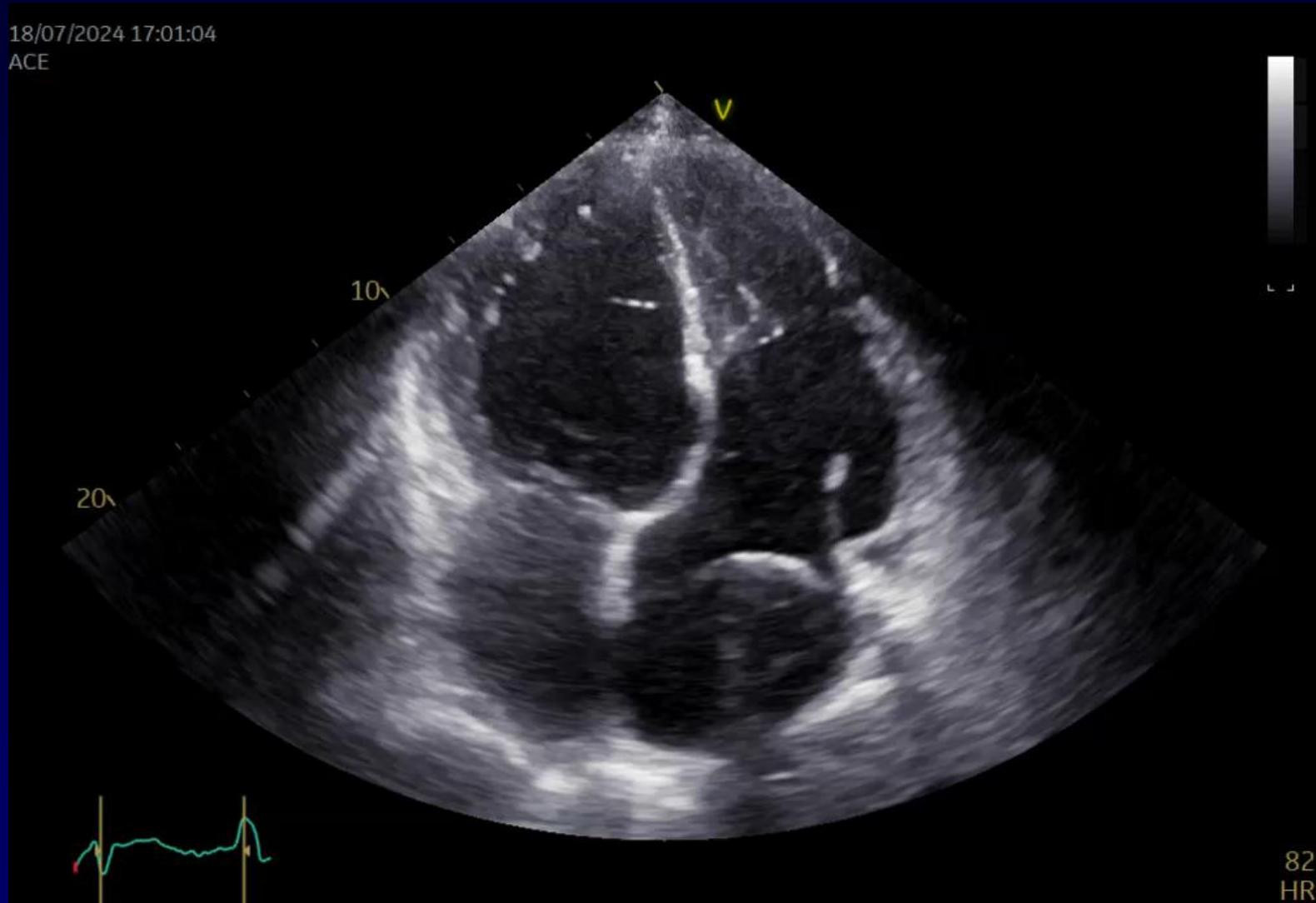


ТТЭхоКГ

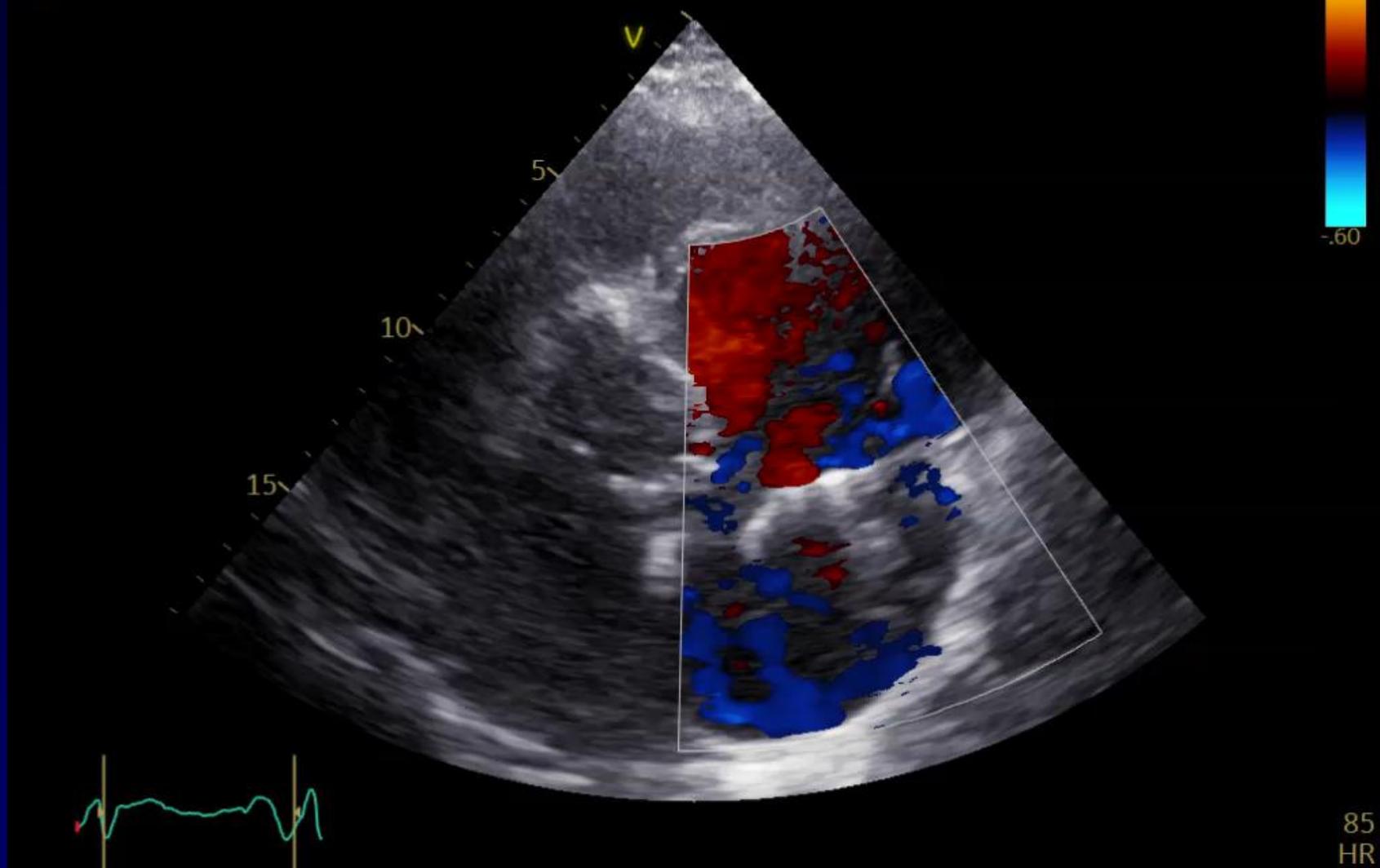
18/07/2024 17:01:04
ACE



Объем ЛП~ 290 мл; иОЛП=140 мл/м² (N ≤27 мл/м²);

18/07/2024 17:00:46

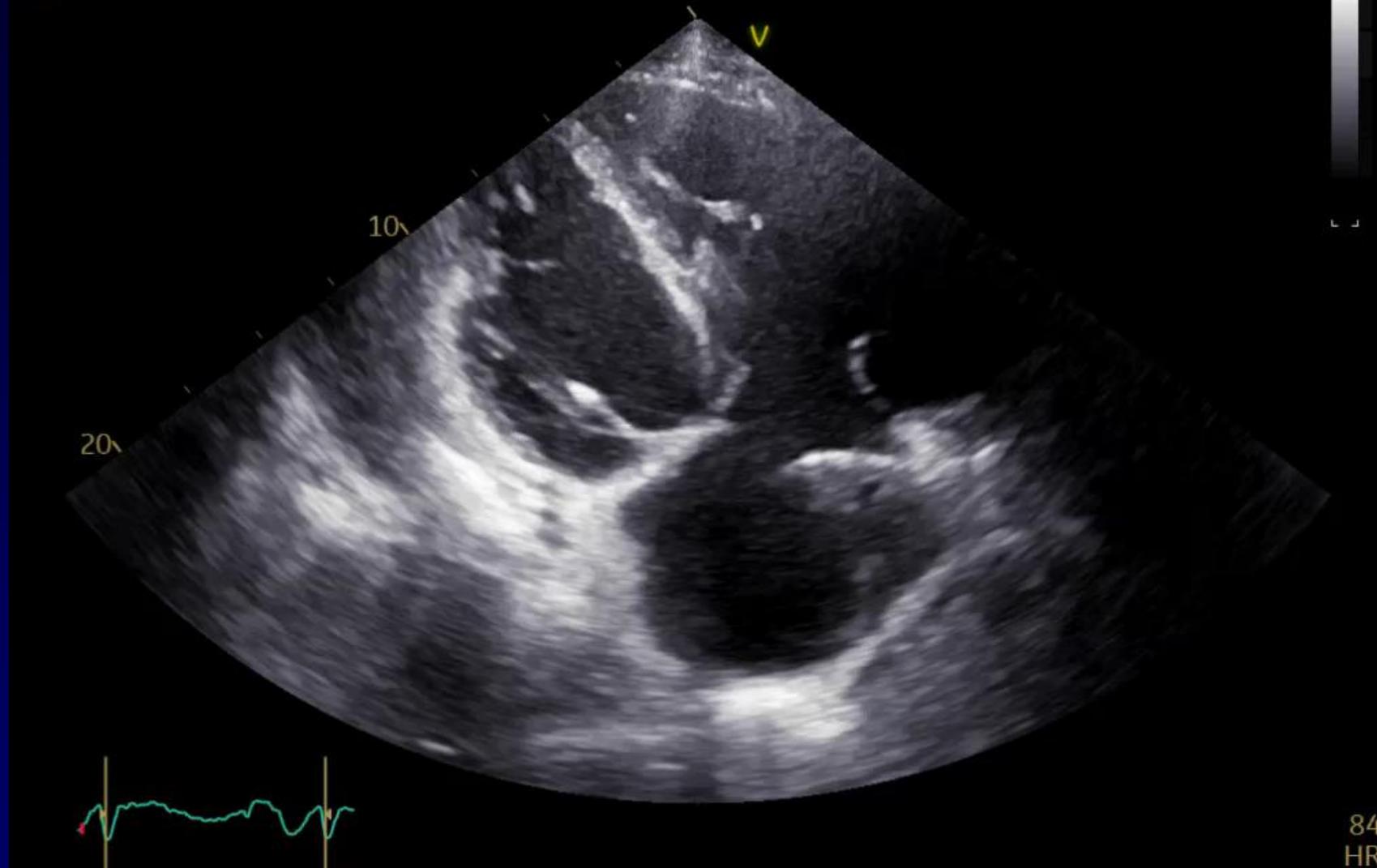
ACE



Регургитация ТК~ 5 ст; VC= 2,1 см

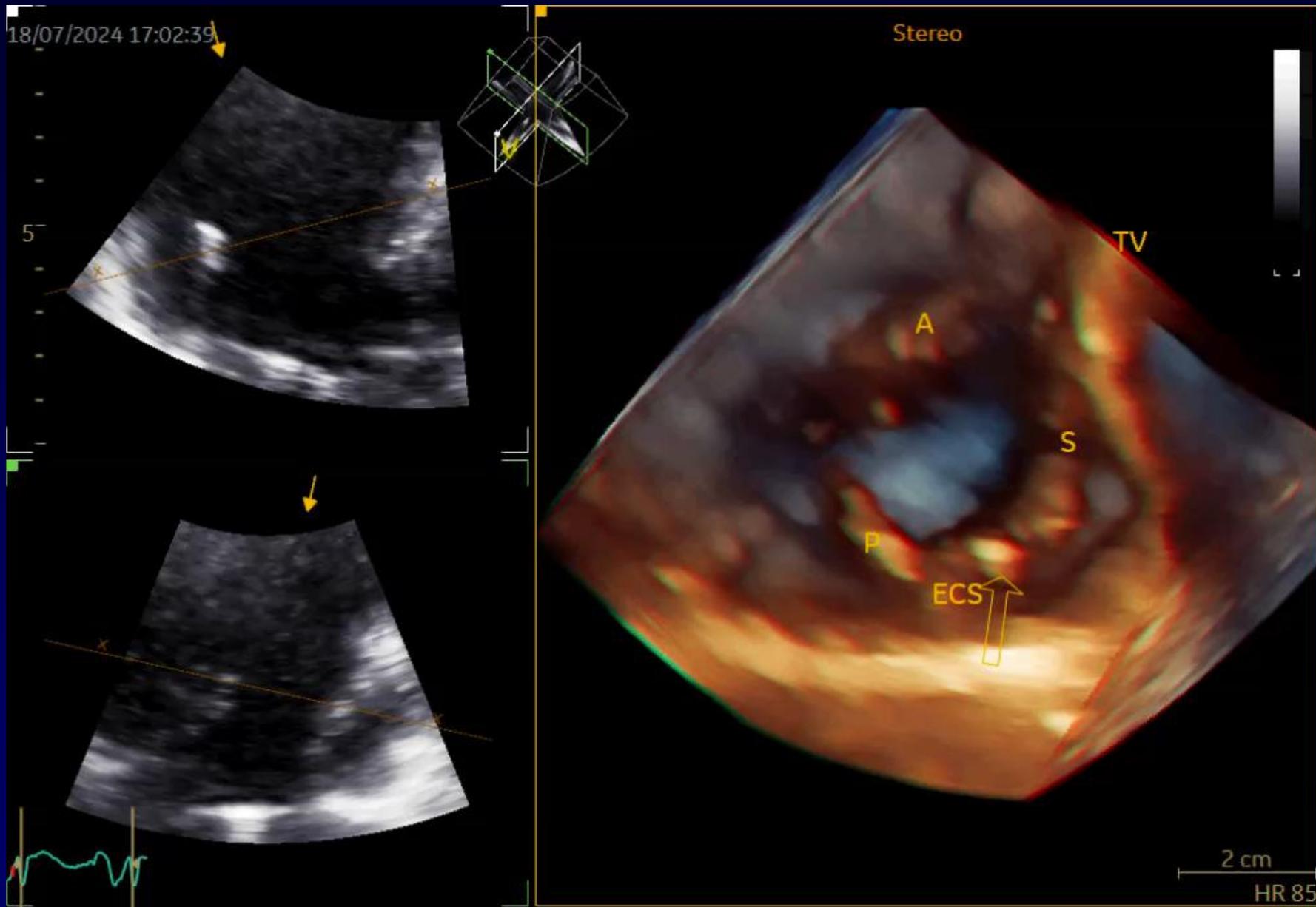
18/07/2024 17:01:21

ACE



Сепарация створок ~ 8 мм; кольцо ТК= 4,9 х4,4 см

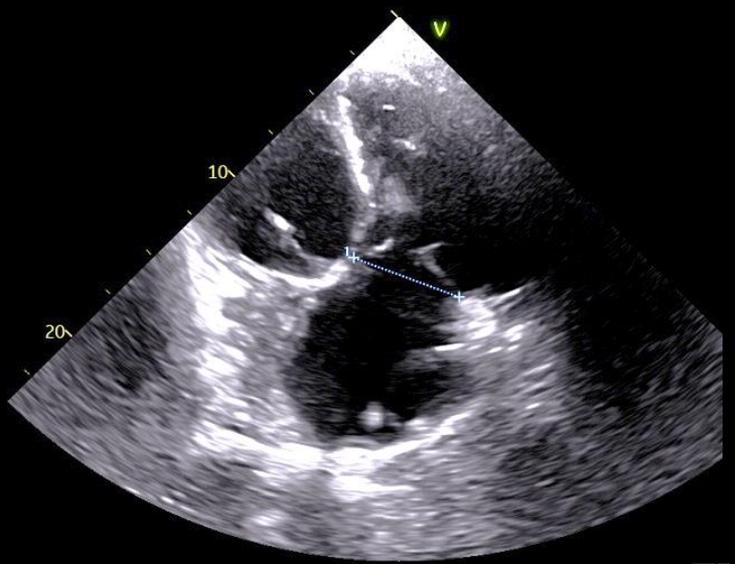
3 D - ТТЭХОКГ



EROA \approx 2,0 cm²

L 4.90 cm

L 6.86 cm



L 4.39 cm

КОЛЬЦО ТК= 4,9-5,0 x 4,4-4,5 см (N ≤3,5 см);

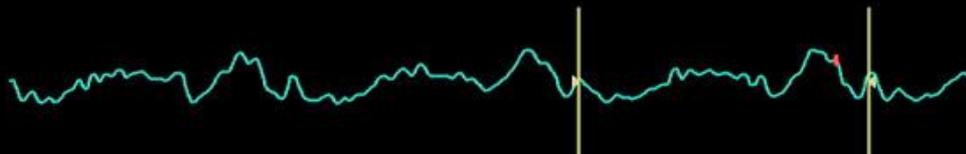
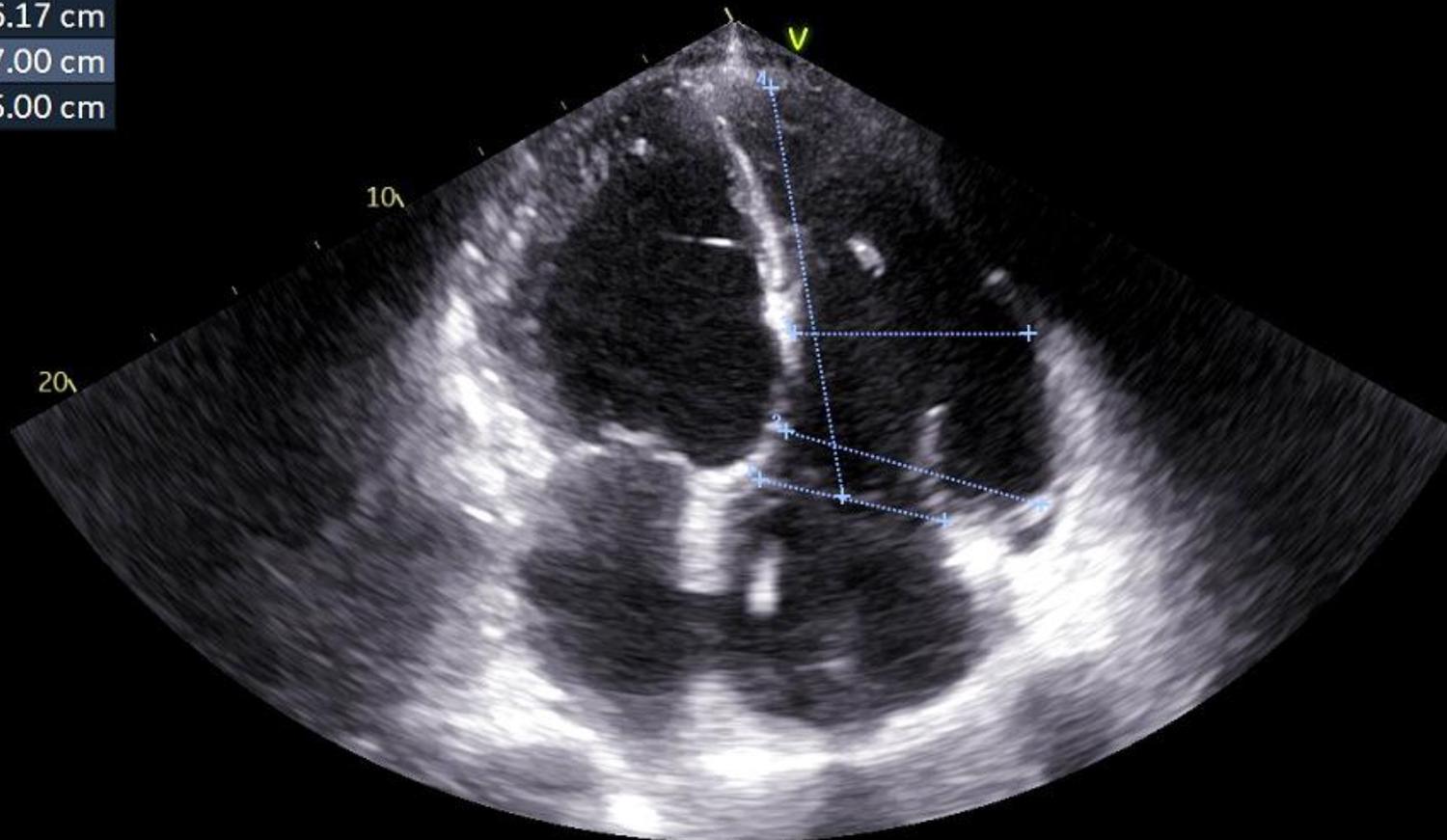


84 HR



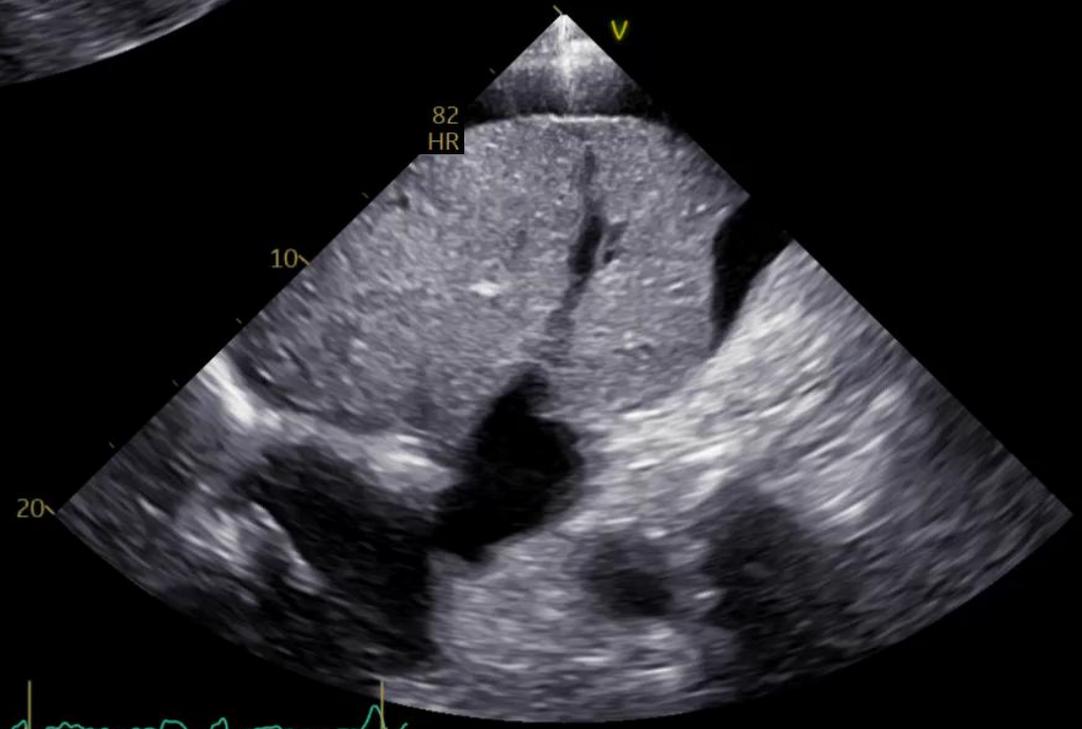
83 HR

4	L	11.09 cm
3	L	6.17 cm
2	L	7.00 cm
1	L	5.00 cm

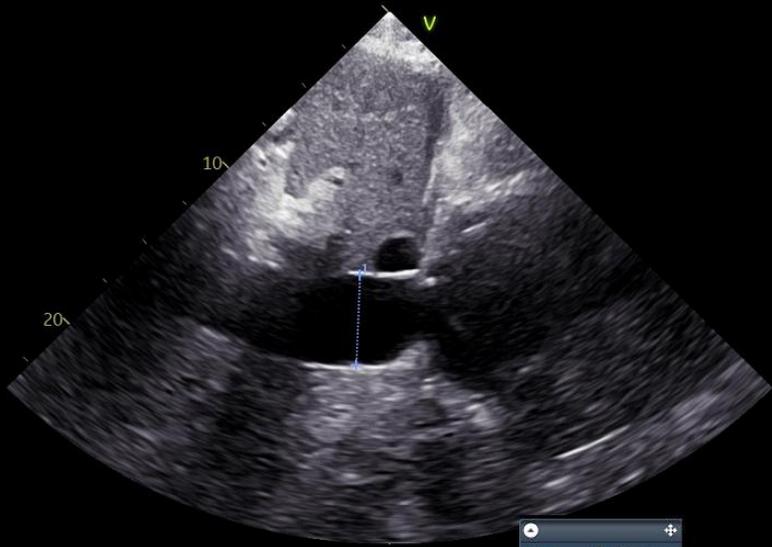


90
HR

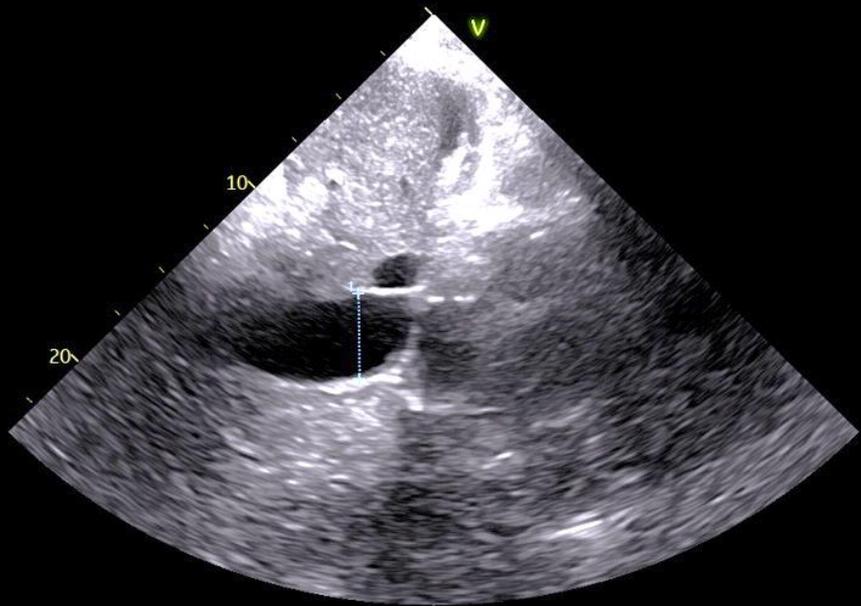
БРПЖ (D1) = 7,0 см; ср РПЖ (D2) = 6,2 см; Длинник (D3) = 11,0 см;
FAC = 22% (N > 35%) TAPSE = 1,35 см (N > 1,7 см)



L 4.07 cm



L 3.46 cm

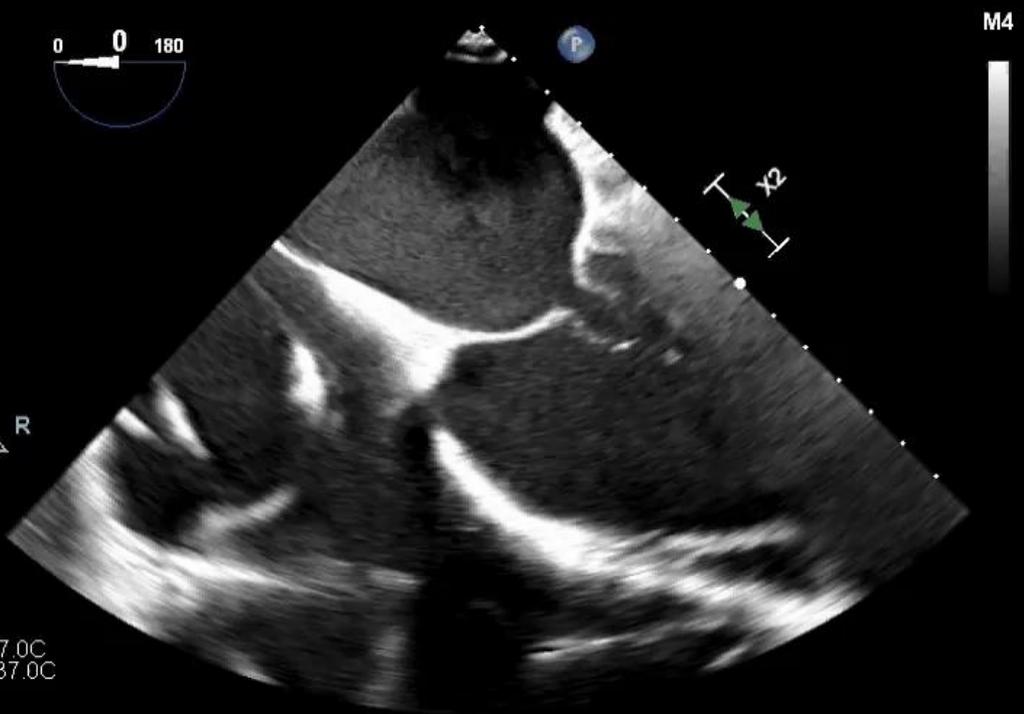


79 HR

ЧПЭхоКГ

КОРХИН ТК
3347002020277
Admir Echo
18.01
9.20.2024
Image 189

НМИЦ Кардиологии МЗ РФ
TIS0.2 MI 0.5
Heart 100%



НМИЦ Кардиологии МЗ РФ
TIS0.2 MI 0.5
Heart 100%



106 BPM

158 BPM

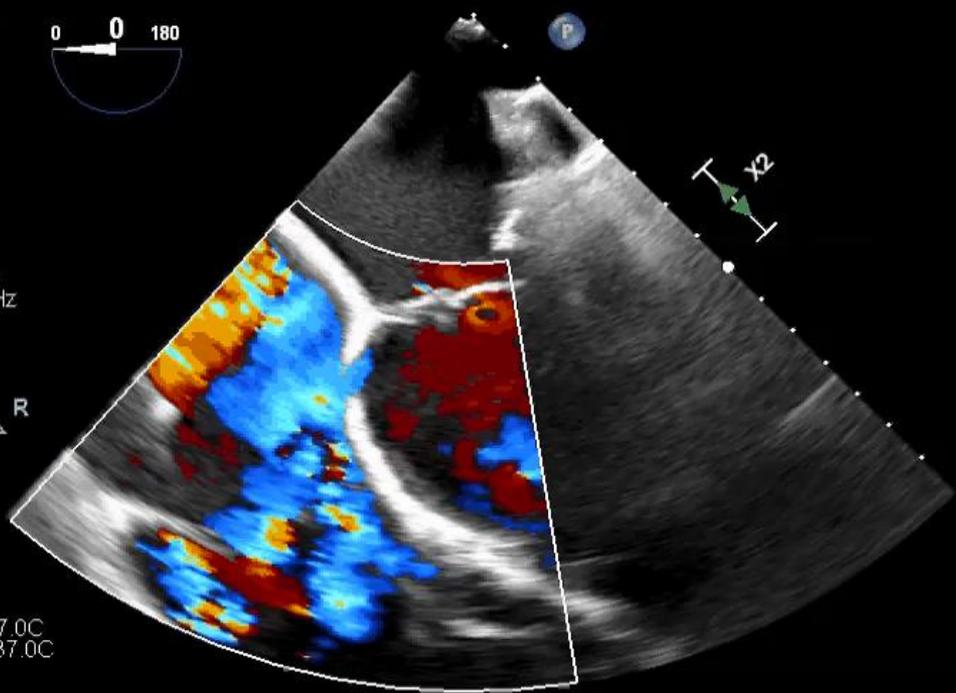
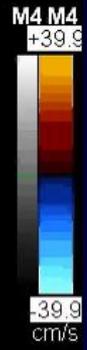
158 bpm

КОРКИН ТК
334700202002277
Adult Echo
3/27/2024
9:38 AM
Image 128

НМИЦ Кардиологии МЗ РФ
TISO.7 MI 0.4 Zoom 100%

2D
68%
C 50
P Off
Gen

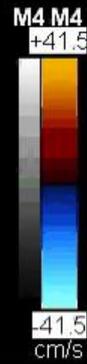
CF
48%
4606Hz
WF 414Hz
4.4MHz



PAT T: 37.0C
TEE T < 37.0C

68 BPM

НМИЦ Кардиологии МЗ РФ
TISO.7 MI 0.4 Zoom 100%



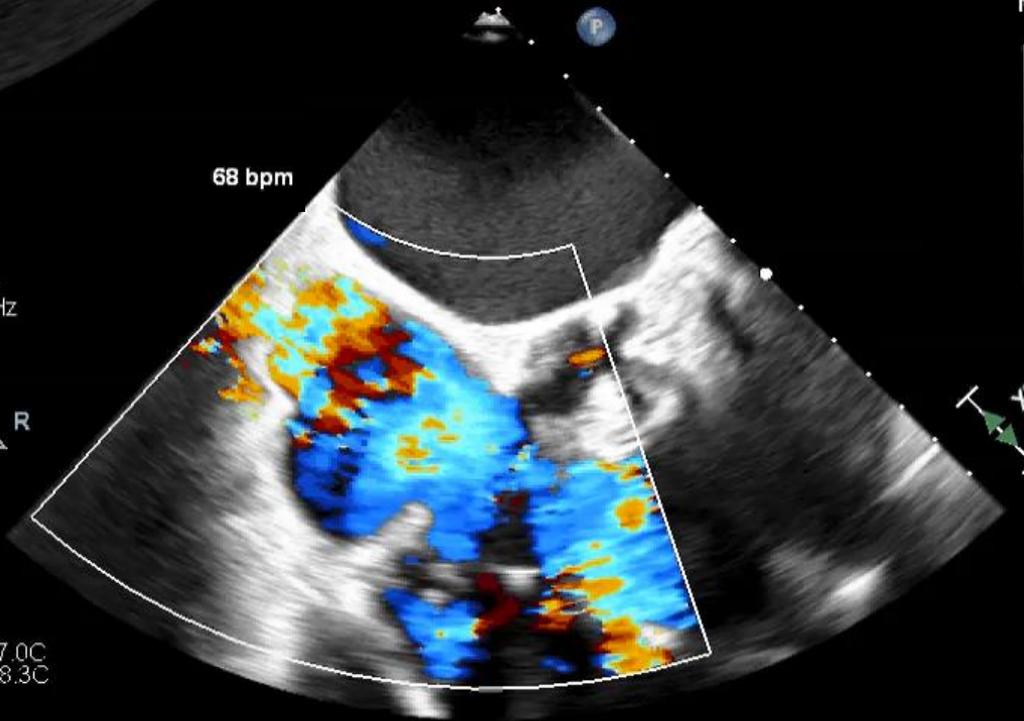
68 bpm

CF
48%
4789Hz
WF 430Hz
4.4MHz



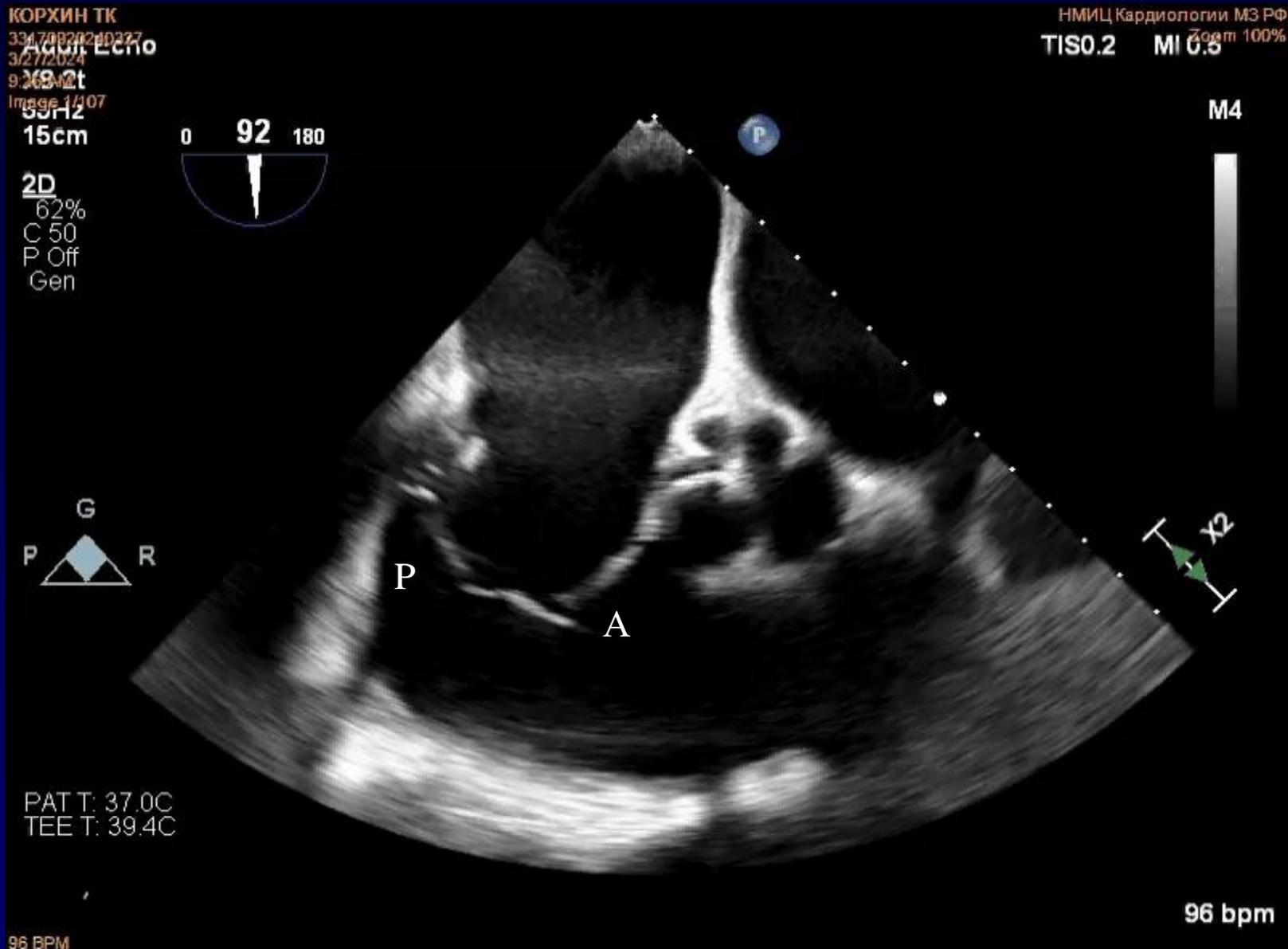
PAT T: 37.0C
TEE T: 38.3C

62 BPM



62 bpm

Deep TEE - позиция



КОРХИН ТК
33470820240377
Adult Echo
3/27/2024
9:26 AM
Image 1/26

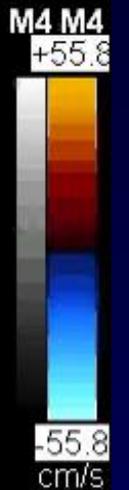
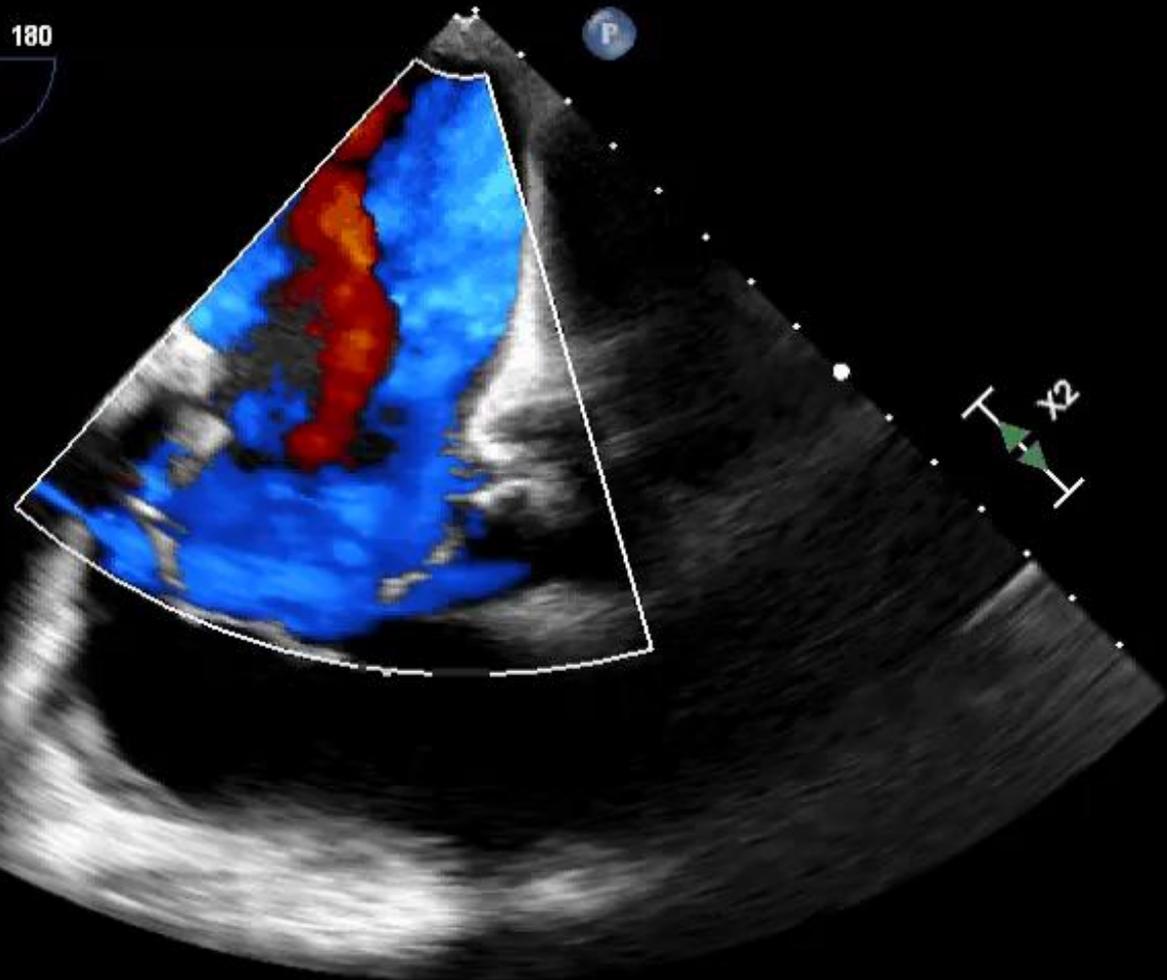
НМИЦ Кардиологии МЗ РФ
TIS 0.7 MI 0.3
Zoom 100%

10Hz
15cm

0 92 180

2D
64%
C 50
P Off
Gen

CF
48%
6434Hz
WF 578Hz
4.4MHz



PAT T: 37.0C
TEE T: 39.4C

84 bpm

84 BPM

Adult Echo

X8-2t

32Hz

15cm

xPlane

65%
65%
50dB
P Off
Gen
XRES 2



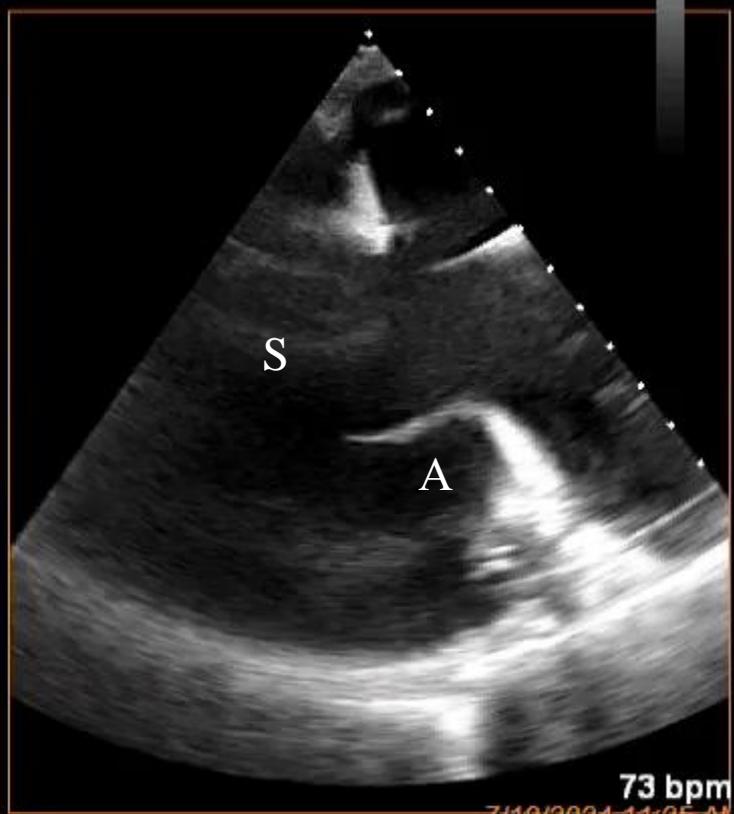
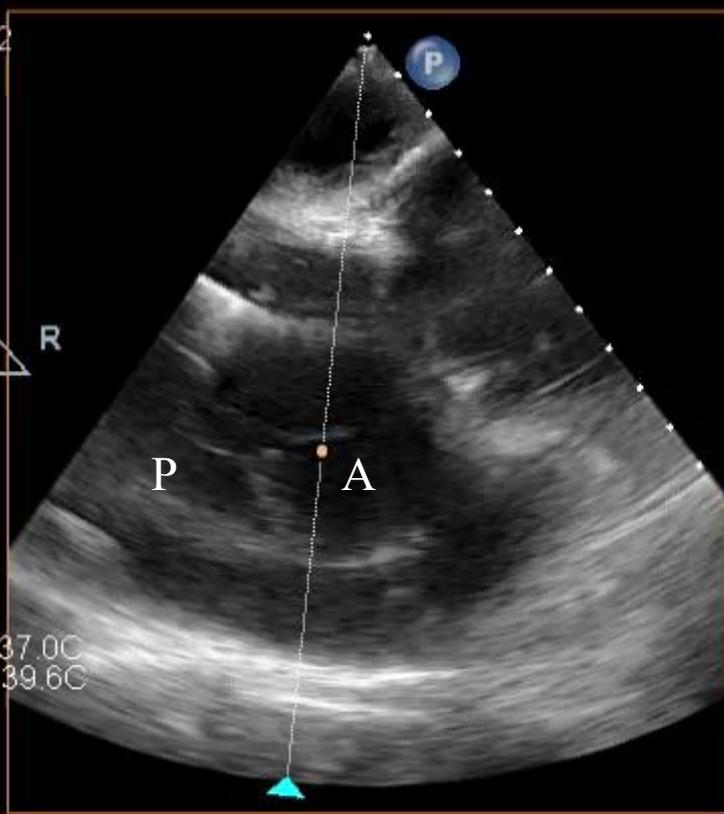
PAT T: 37.0C
TEE T: 39.6C

JPEG

HR: 73

TISO.2 MI 0.5

M4



73 bpm

7/19/2024 11:25 AM

КОРХИН ТК
33470020240377
Adult Echo
3/27/2024
9:20 AM
Image 1/14

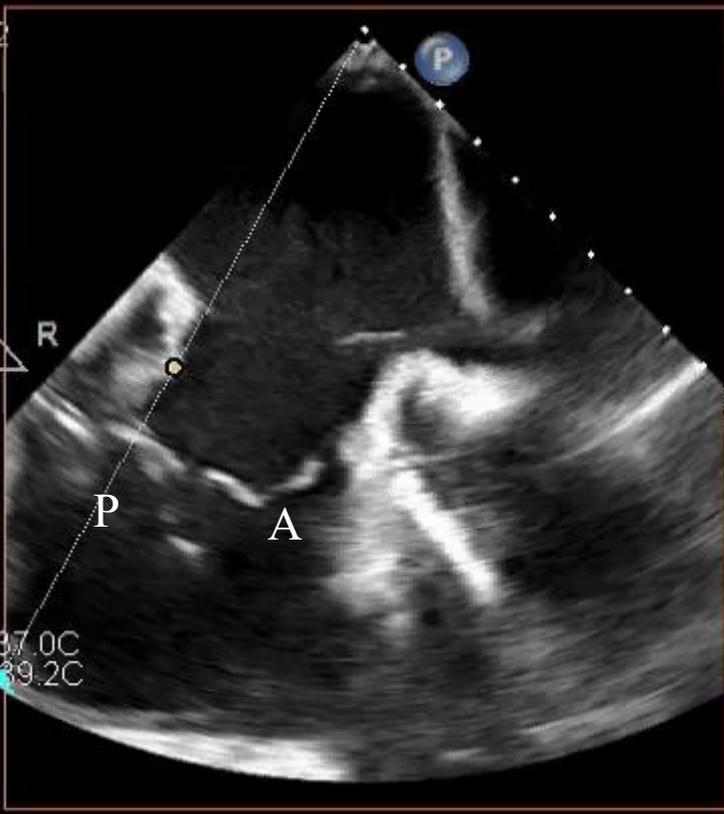
НМИЦ Кардиологии МЗ РФ
TISO.2 MI 0.5
Zoom 100%

27 Hz
14cm

xPlane
64%
64%
50dB
P Off
Gen
XRES 2



M4



PAT T: 37.0C
TEE T: 39.2C

79 BPM

КОРХИН ТК

3347002020277

Adult Echo

18.2t

Image 1/22

12.1Hz
14cm

xPlane

66%

66%

50dB

P Off

Gen

XRES 2

CF

48%

6285Hz

WF 565Hz

4.4MHz



PAT T: 37.0C

TEE T: 30.4C

114 BPM

НМИЦ Кардиологии МЗ РФ

TISO.6 MI 0.4

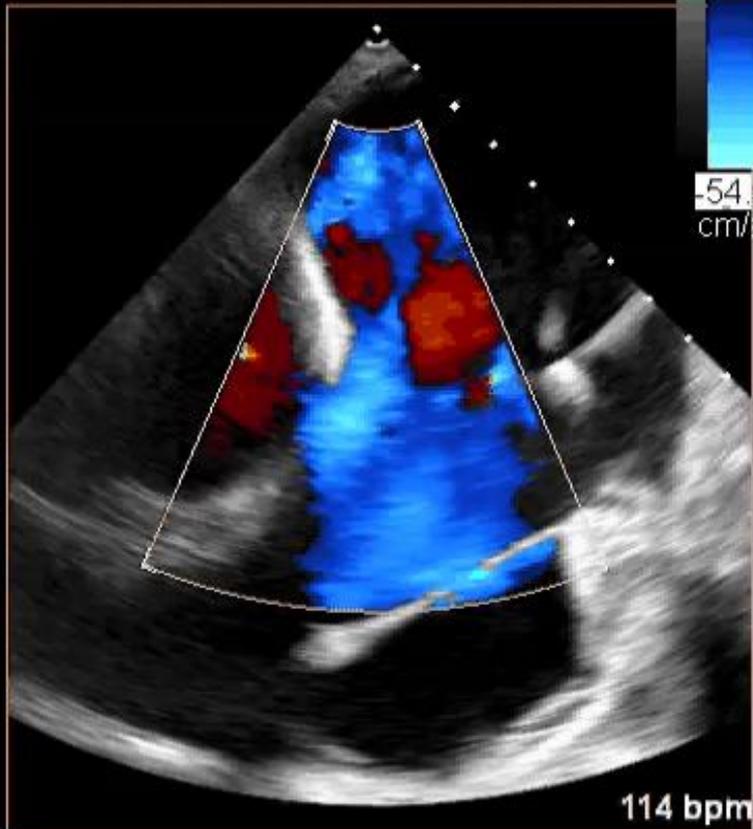
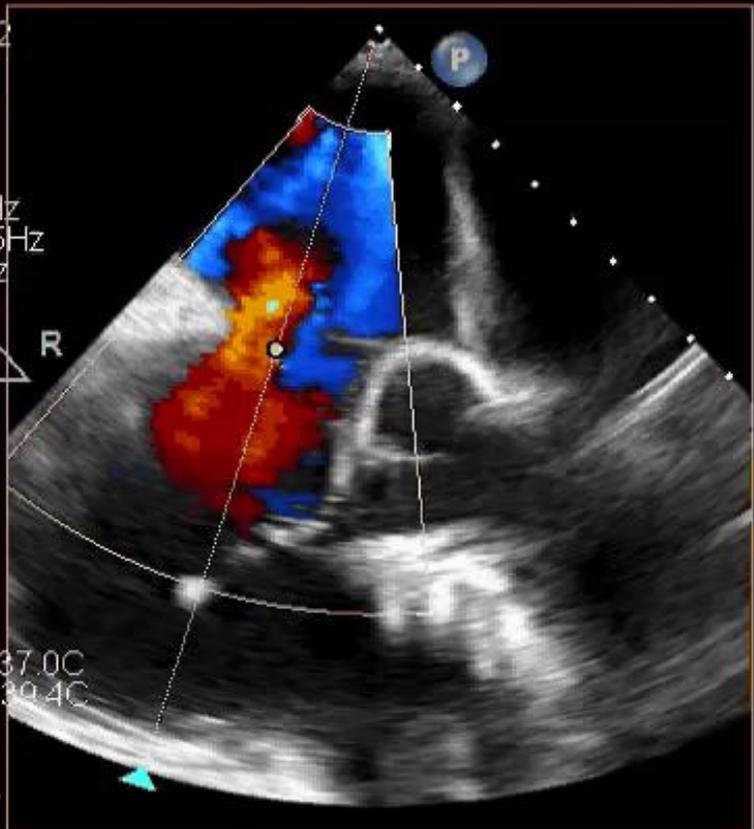
Zoom 100%

M4M4

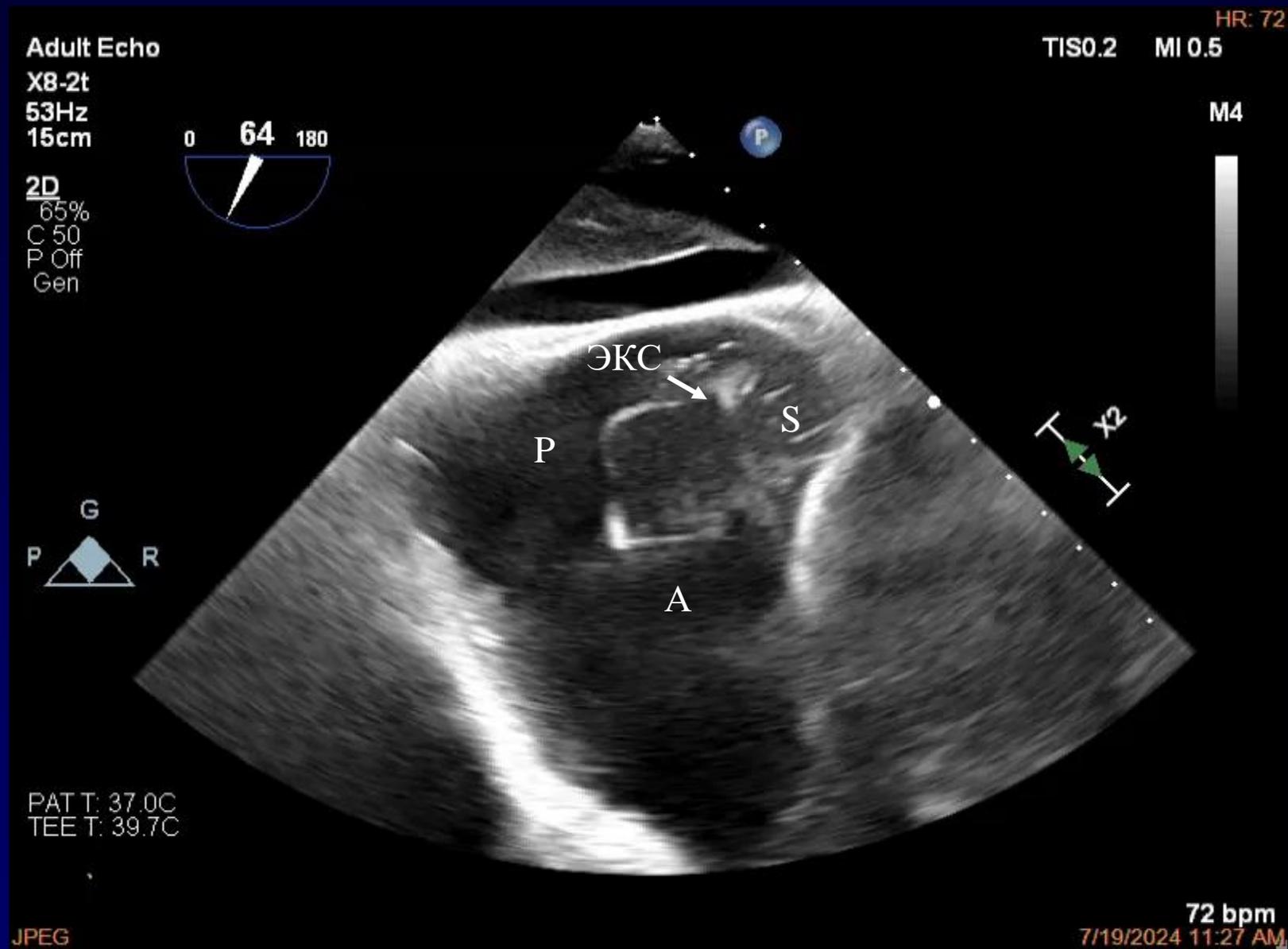
+54.5

-54.5

cm/s



TG - позиция



Adult Echo

X8-2t

18Hz

15cm

2D

67%

C 50

P Off

Gen

CF

44%

5888Hz

WF 529Hz

4.4MHz



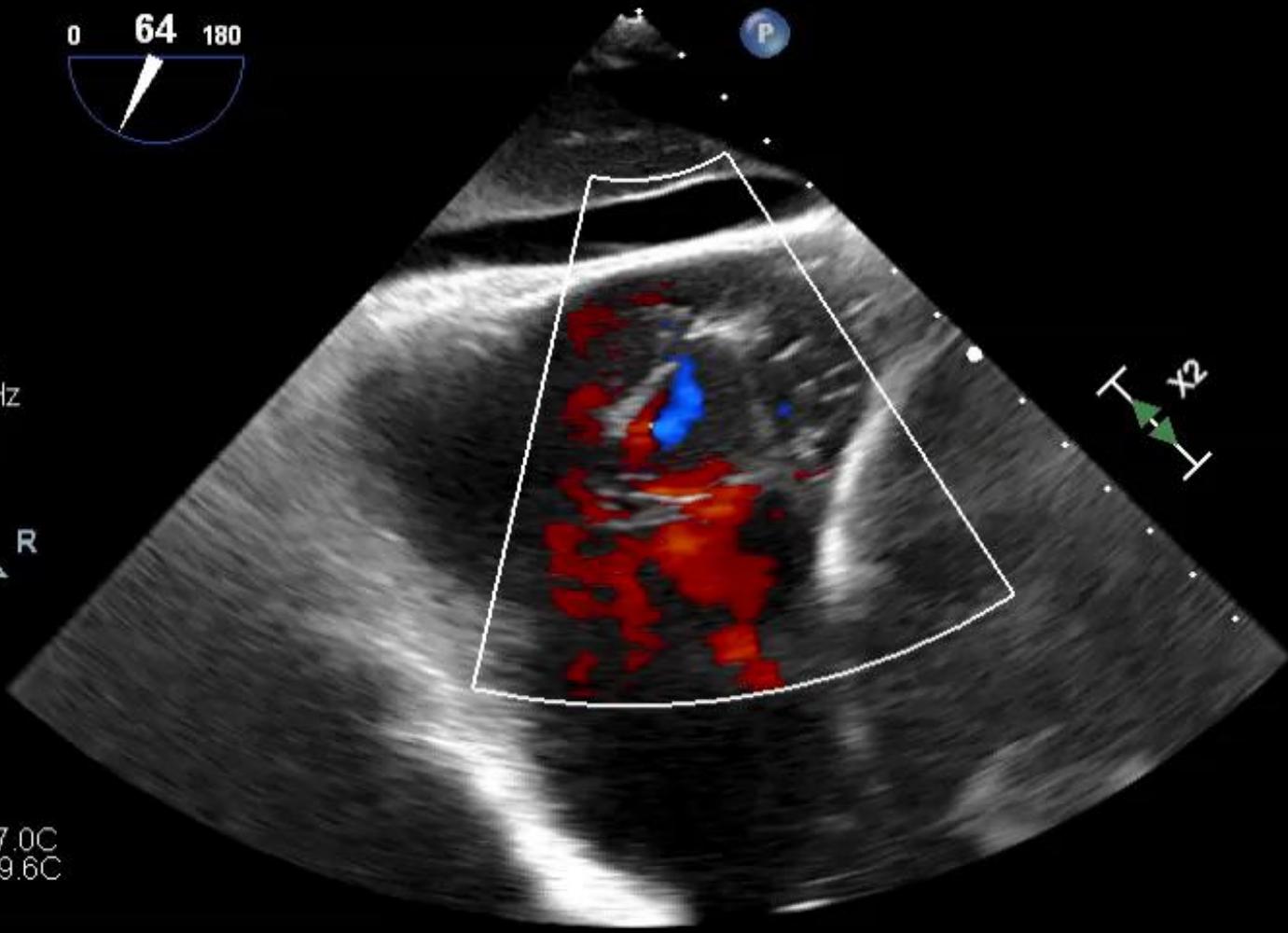
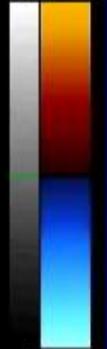
HR: 72

TIS0.6

MI 0.4

M4 M4

+51.1



PAT T: 37.0C
TEE T: 39.6C

JPEG

72 bpm

7/19/2024 11:27 AM

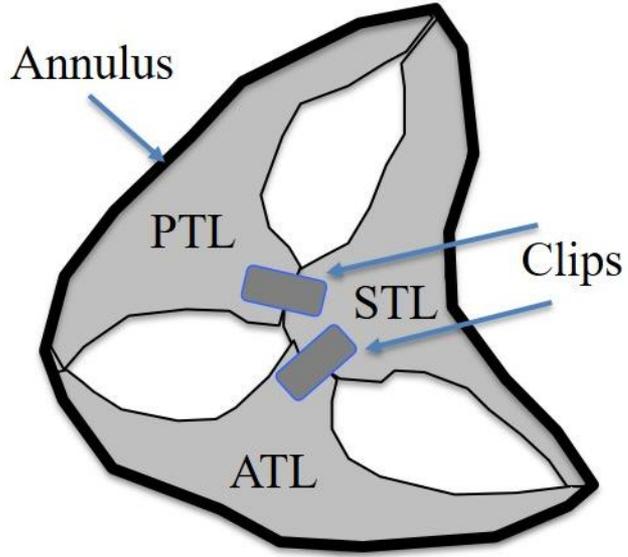
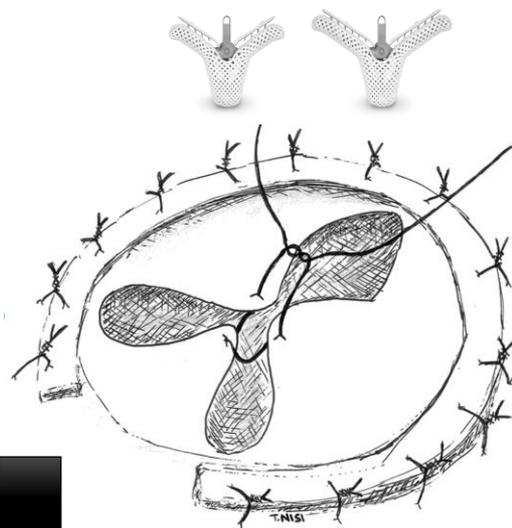
Вопросы:

- 1. Подходит ли больной для отбора на операцию?*
- 2. Какой сценарий имплантации клипс?*

Отбор пациентов на операцию TriClip

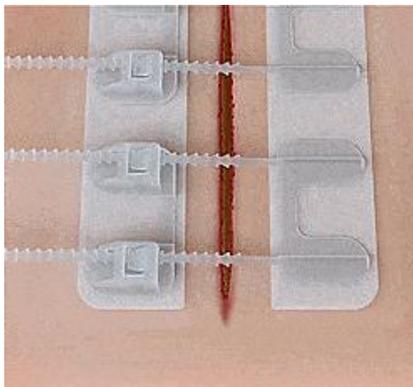
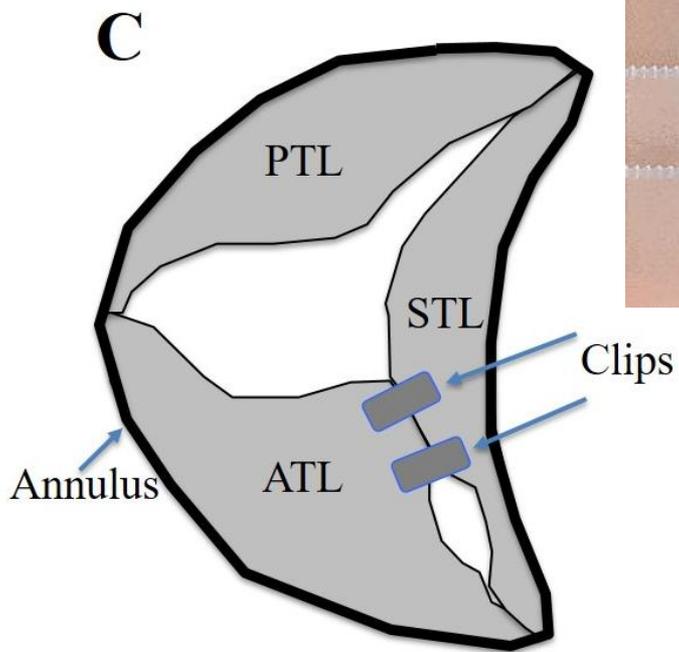
Идеальные кандидаты:	Спорные кандидаты:	Не рекомендованные кандидаты:
Вторичная ТР с нормальными створками	Вторичная ТР с нормальными створками или первичная ТР с пролапсом	Выраженное уплотнение створок (ревматическое), короткие поврежденные створки или выраженным пролапс створок
Хорошая визуализация при ЧПЭхоКГ	Достаточное качество визуализации створок при ЧПЭхоКГ	Плохое качество визуализации при ЧПЭхоКГ
Небольшая сепарация створок (< 7 mm); хорошая мобильность створок	Сепарация выраженная (>7,0 ≤ 8,5 mm); ограниченная подвижность створок	Сепарация значительная (> 8,5 mm); выраженная рестрикция створок
Отсутствие электродов, достаточное расстояние до ПМ	Наличие электродов без существенного взаимодействия со створками и без потенциального с клипсой	ТР, обусловленная сращением с электродами ЭКС
Отсутствие дисфункции ПЖ или умеренная дисфункция, нерасширенное или слегка расширенное кольцо	Умеренная дисфункция ПЖ, умеренная дилатация кольца	Тяжелая дисфункция ПЖ, выраженная дилатация кольца (>5 см)
Отсутствие высокой ЛГ	Посткапиллярная ЛГ ; или СДЛА <60-65 mmHg при ОЛСС < 4 UW	СДЛА > 60-65 mmHg при ОЛСС < 4 UW
Выраженная ТР (по 5-балльной шкале тяжести)	Массивная ТР (4 ст.)	Профузная ТР (5 ст.)
Центральная струя в комиссуре между передней и септальной створками (A-S)	Центральная струя в комиссуре между задней-септальной (A-P) и передней-септальной створками (A-S)	Очень эксцентричная струя; или струя из передне-задней комиссуры (A-P)

Техника тройного отверстия (клевер)



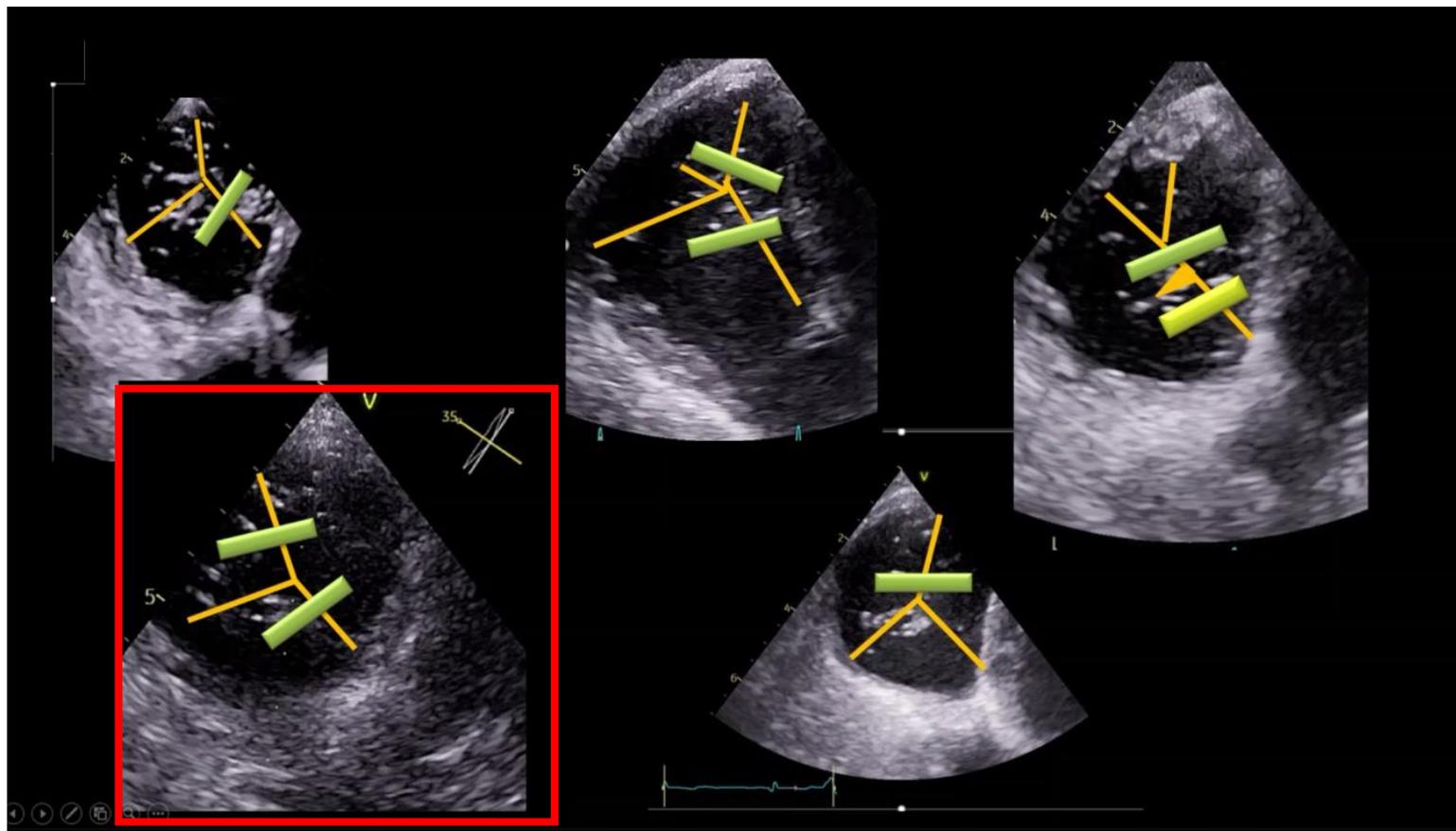
Braun D, JACC Cardio Interv 2018

Техника бикуспидализации (Zipping)



Braun D, JACC Cardio Interv 2018

Планирование является ключевым моментом операции



Операция TriClip у больного с ЭКС от 19.07.2024 г.

Adult Echo

X8-2t

32Hz

15cm

xPlane

65%

65%

50dB

P Off

Gen

XRES 2

HR: 73

TISO.2

MI 0.5

M4

80



6

170



PAT T: 37.0C
TEE T: 39.6C

JPEG



73 bpm

7/19/2024-11:25 AM

Adult Echo

X8-2t

12Hz

15cm

TISO.6

MI 0.4

M4M4

+50.2

80



-50.2

cm/s

xPlane

67%
67%
50dB
P Off
Gen
XRES 2

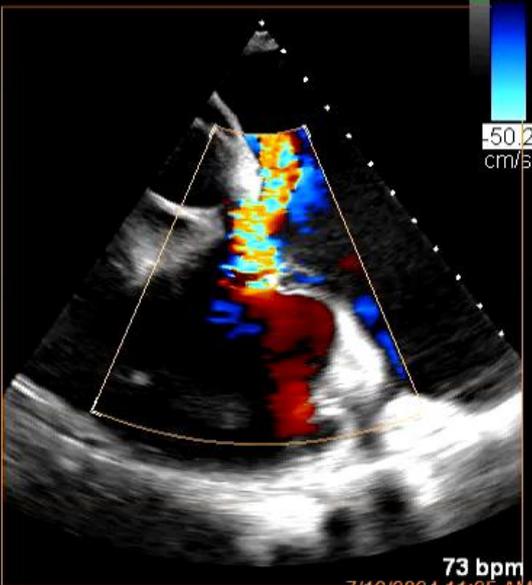
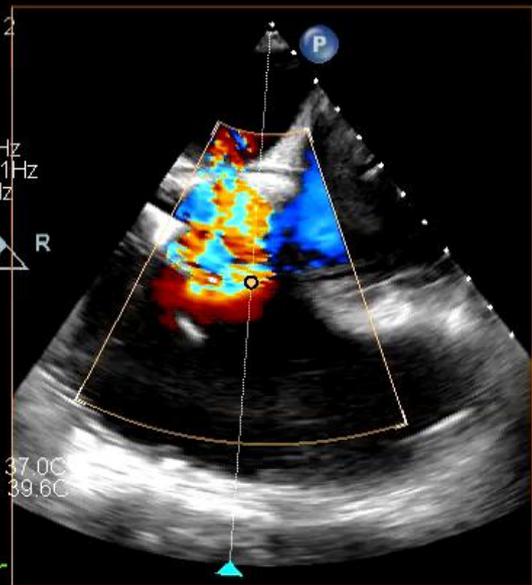
CF

44%
5790Hz
WF 521Hz
4.4MHz



PAT T: 37.0C
TEE T: 39.6C

JPEG



73 bpm
7/19/2024-11:25 AM

TISO.6

MI 0.4

HR: 73

M4M4

+49.4



-49.4

cm/s

Gen
XRES 2

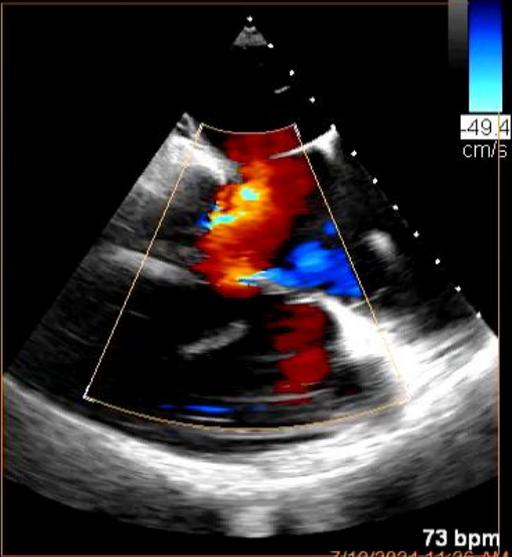
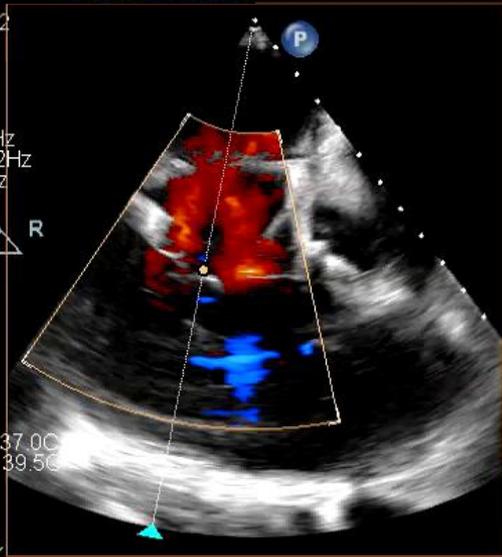
CF

44%
5692Hz
WF 512Hz
4.4MHz



PAT T: 37.0C
TEE T: 39.5C

JPEG



73 bpm
7/19/2024-11:26 AM

Adult Echo

X8-2t
53Hz
15cm

TISO.2 MI 0.5

HR: 72

M4



2D
65%
C 50
P Off
Gen



PAT T: 37.0C
TEE T: 39.7C

JPEG

TISO.6 MI 0.4

HR: 72

M4 M4
+51.1

-51.1
cm/s

72 bpm

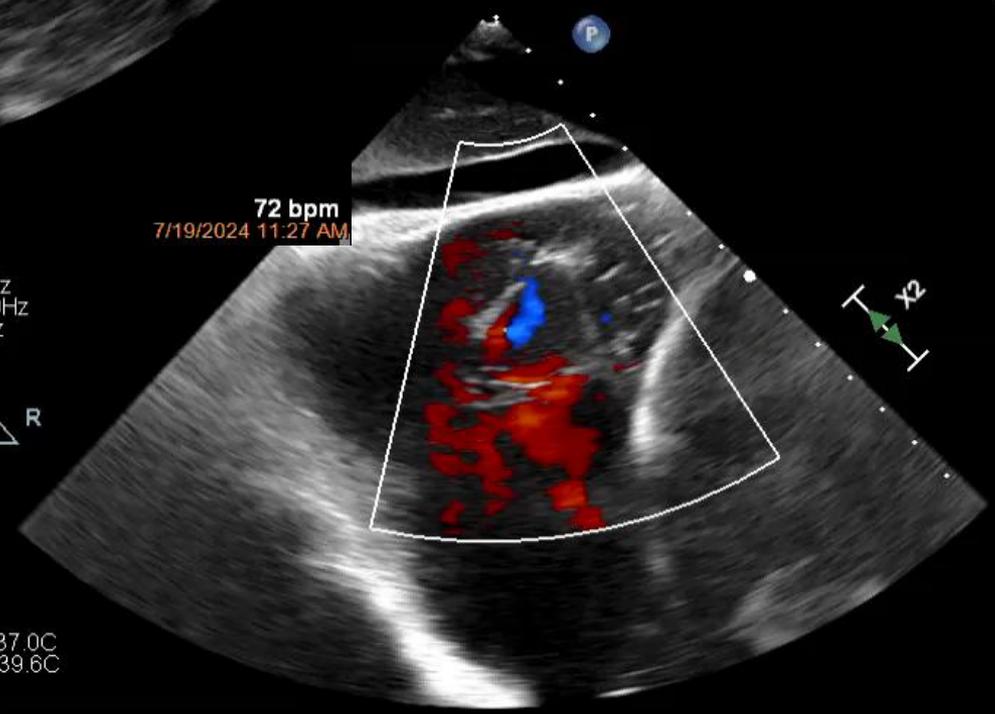
7/19/2024 11:27 AM

44%
5888Hz
WF 529Hz
4.4MHz



PAT T: 37.0C
TEE T: 39.6C

JPEG



72 bpm

7/19/2024 11:27 AM

Adult Echo

X8-2t

53Hz

15cm

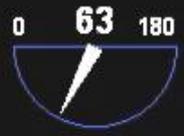
2D

66%

C 50

P Off

Gen



HR: 72

TIS 0.2 MI 0.5

M4



PAT T: 37.0C
TEE T: 39.5C

JPEG

72 bpm
7/19/2024 11:45 AM

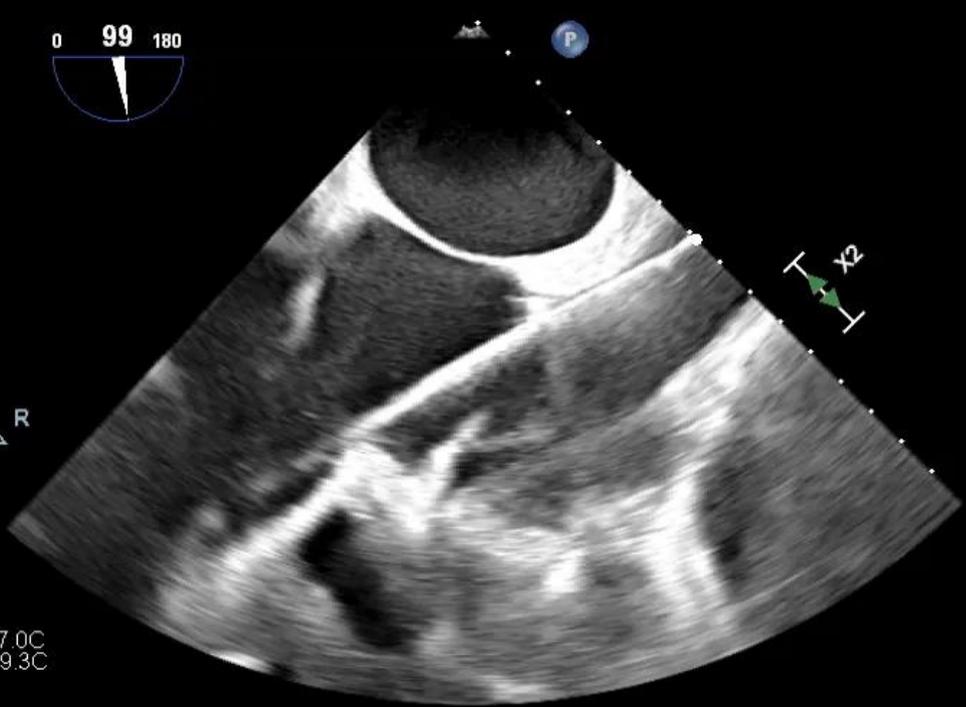
Adult Echo
X8-2t
53Hz
16cm

TISO.2 MI 0.5

HR: 74



2D
66%
C 50
P Off
Gen



PAT T: 37.0C
TEE T: 39.3C

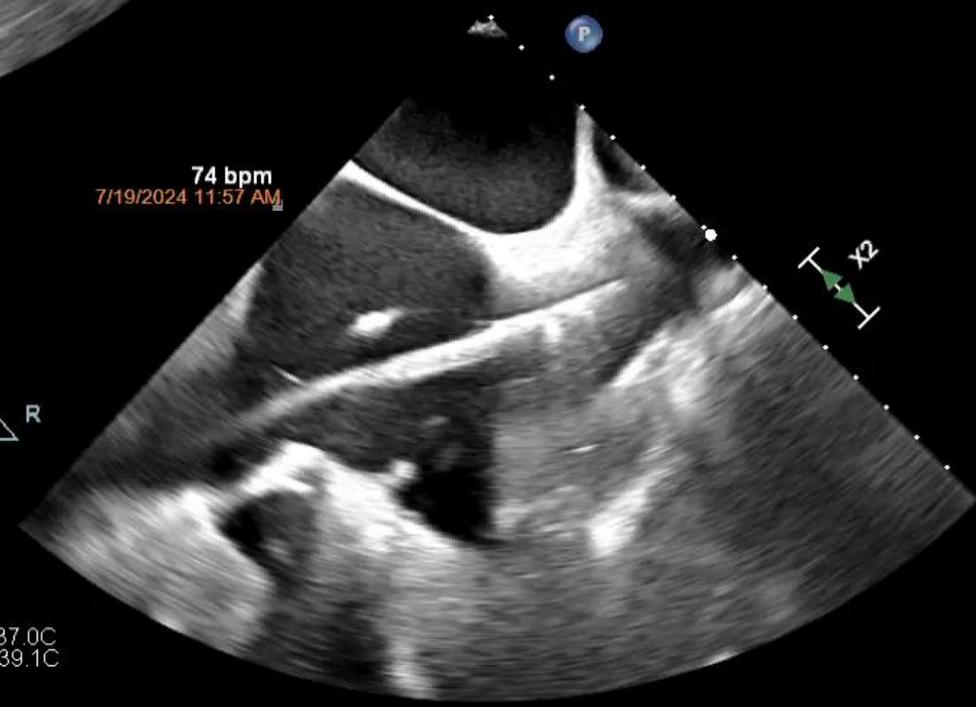
JPEG

TISO.2 MI 0.5

HR: 74

M4

74 bpm
7/19/2024 11:57 AM

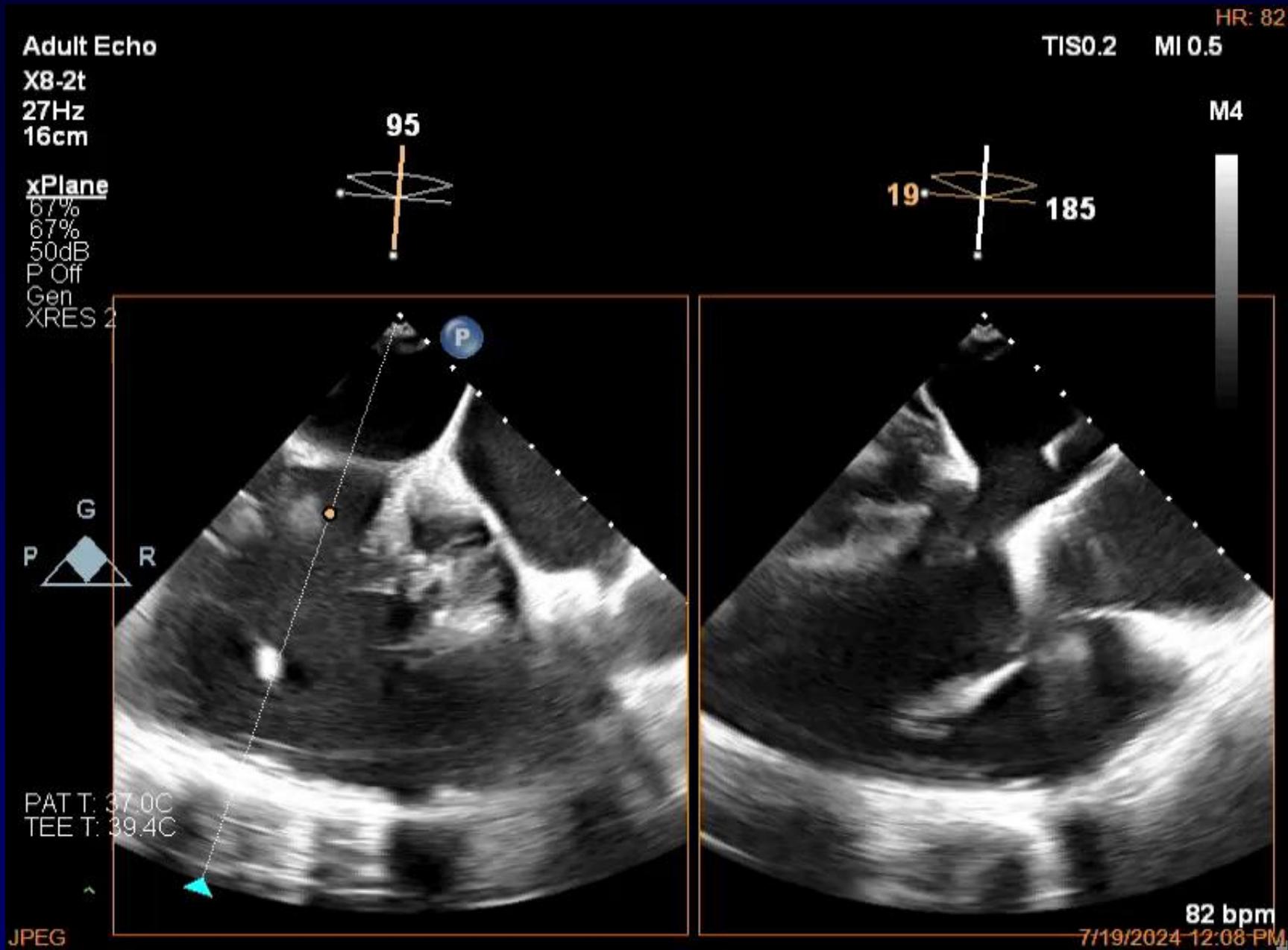


PAT T: 37.0C
TEE T: 39.1C

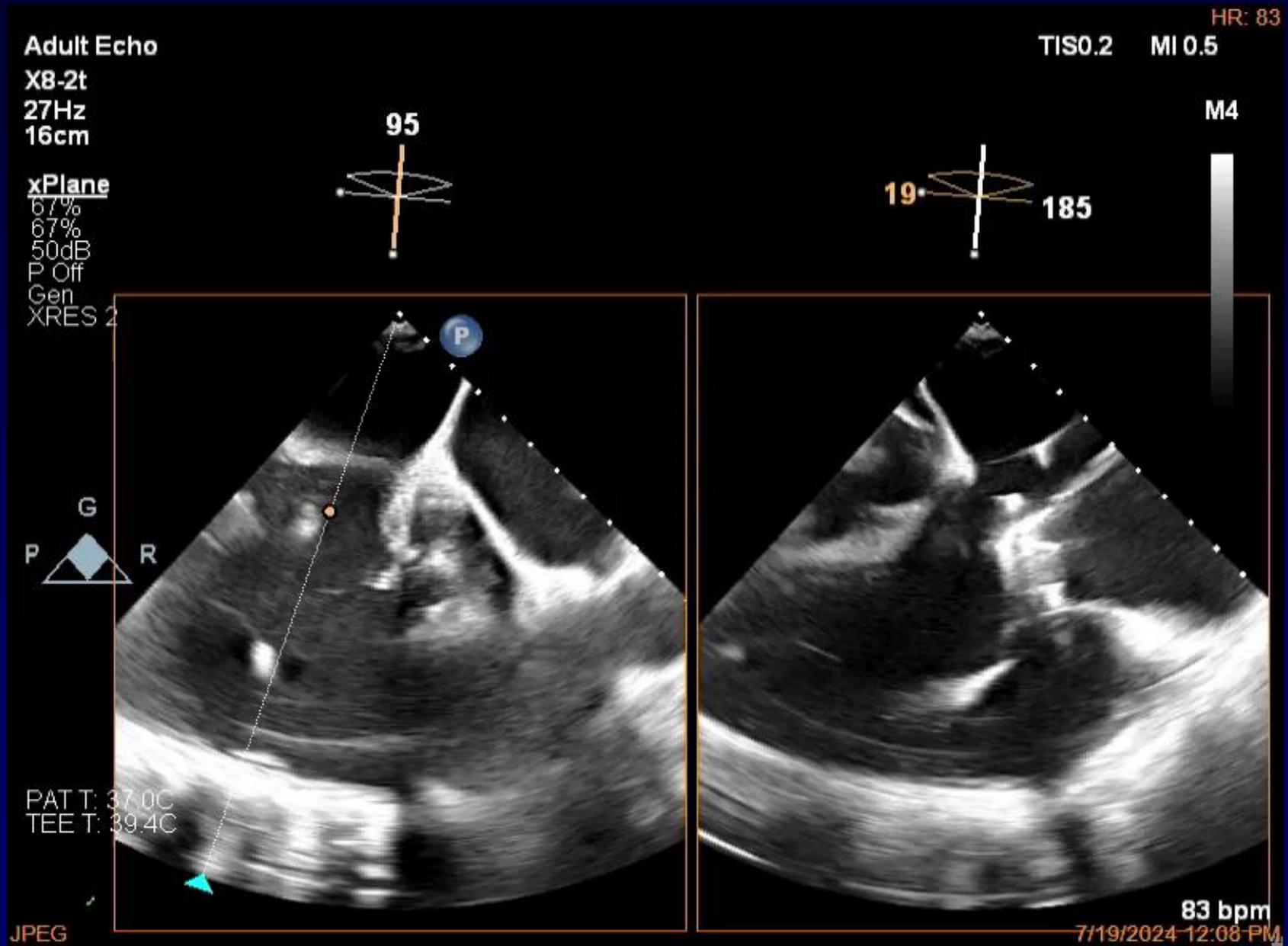
JPEG

74 bpm
7/19/2024 12:05 PM

Оценка направления клипсы



Открытие клипсы, проверка грипперов



Adult Echo
X8-2t
53Hz
16cm

TISO.2 MI 0.5 HR: 82

Позиционирование клипсы



2D
67%
C 50
P Off
Gen

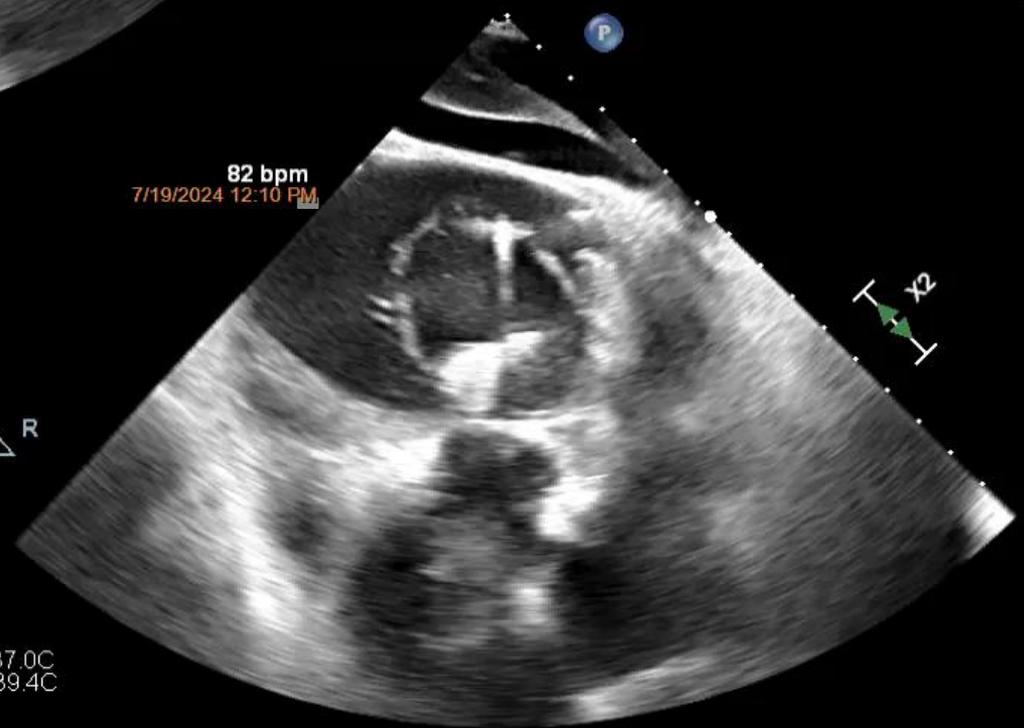


PAT T: 37.0C
TEE T: 39.5C

JPEG

TISO.2 MI 0.5 HR: 82

M4

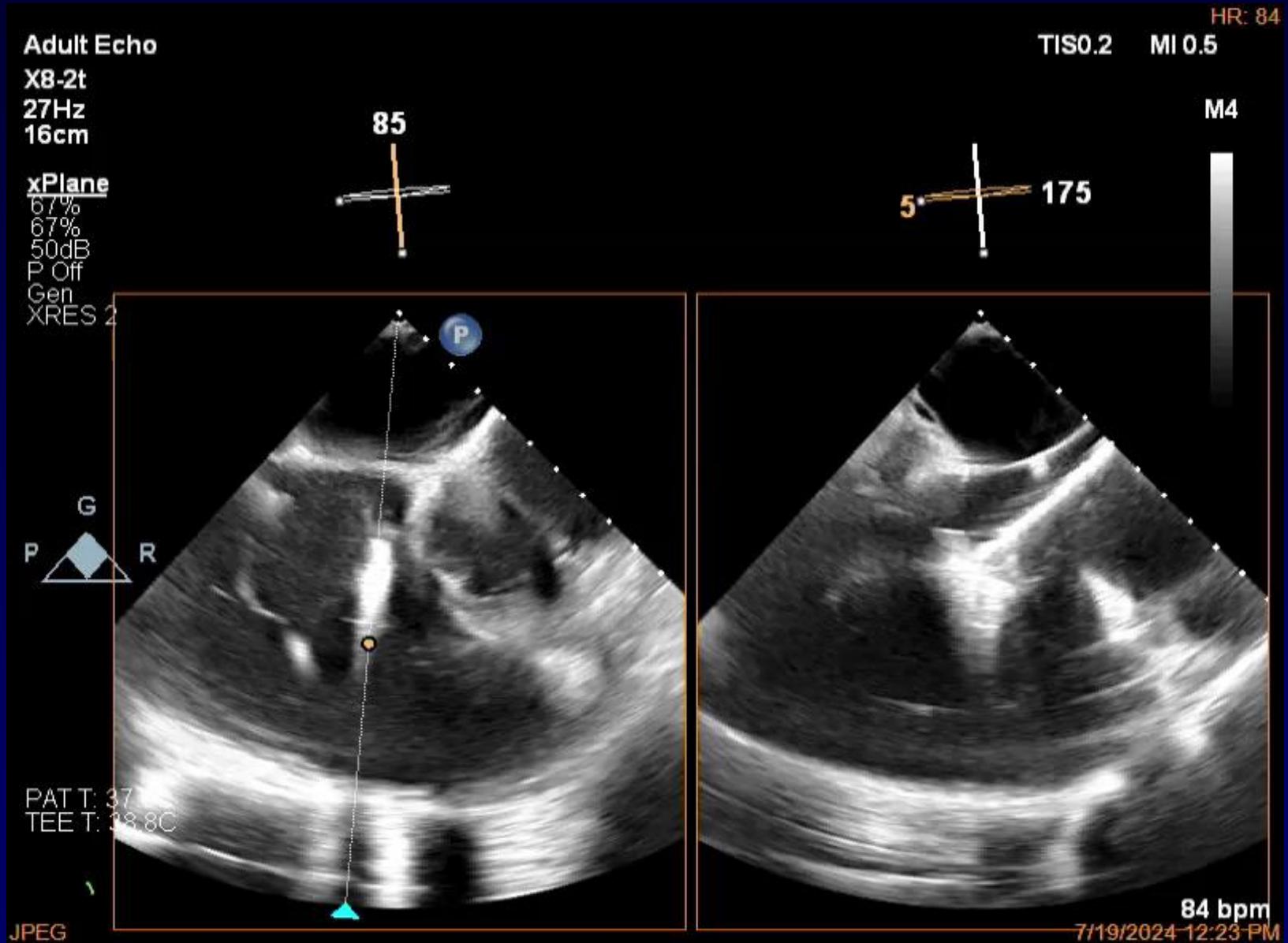


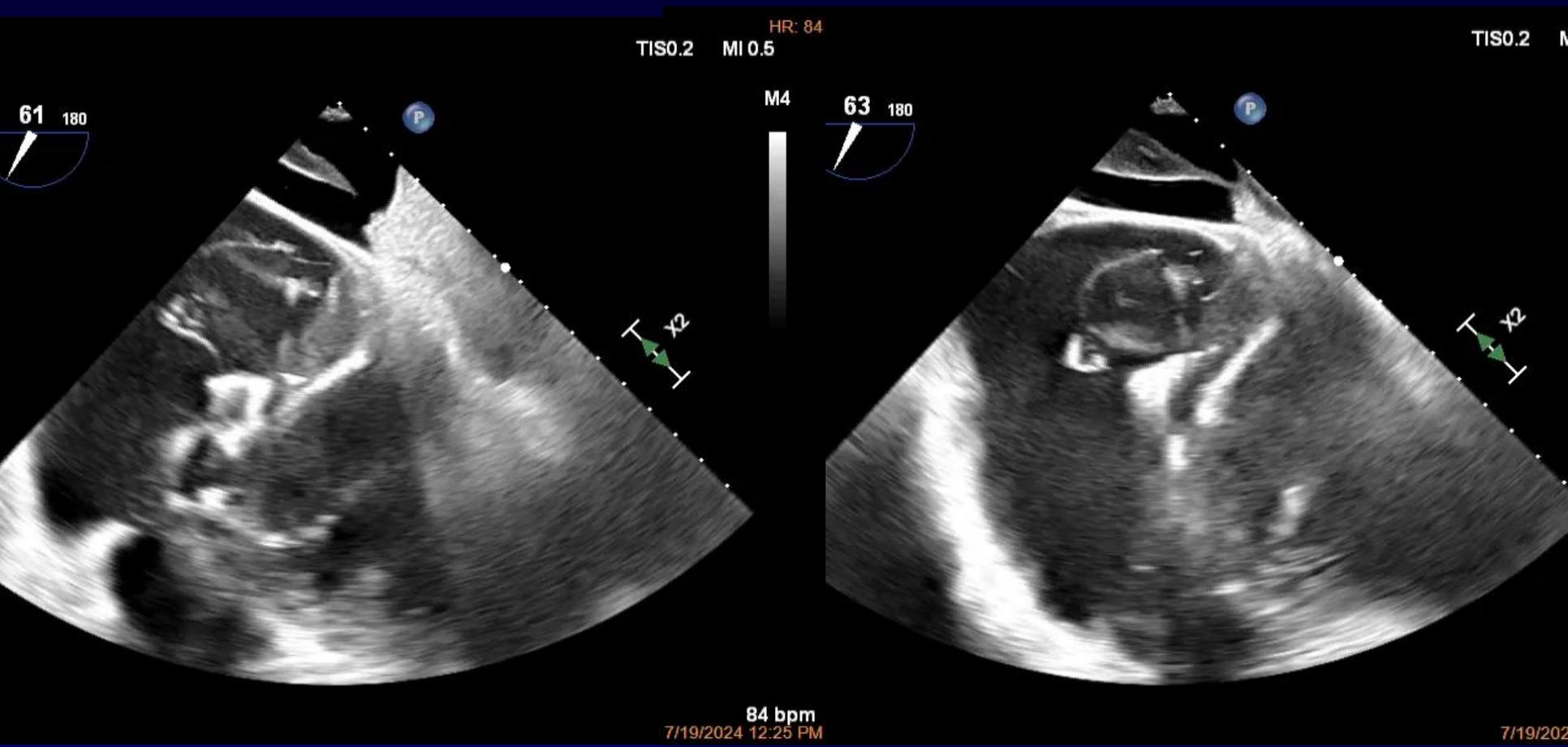
PAT T: 37.0C
TEE T: 39.4C

JPEG

82 bpm
7/19/2024 12:10 PM

Падение створок на плечи клипсы

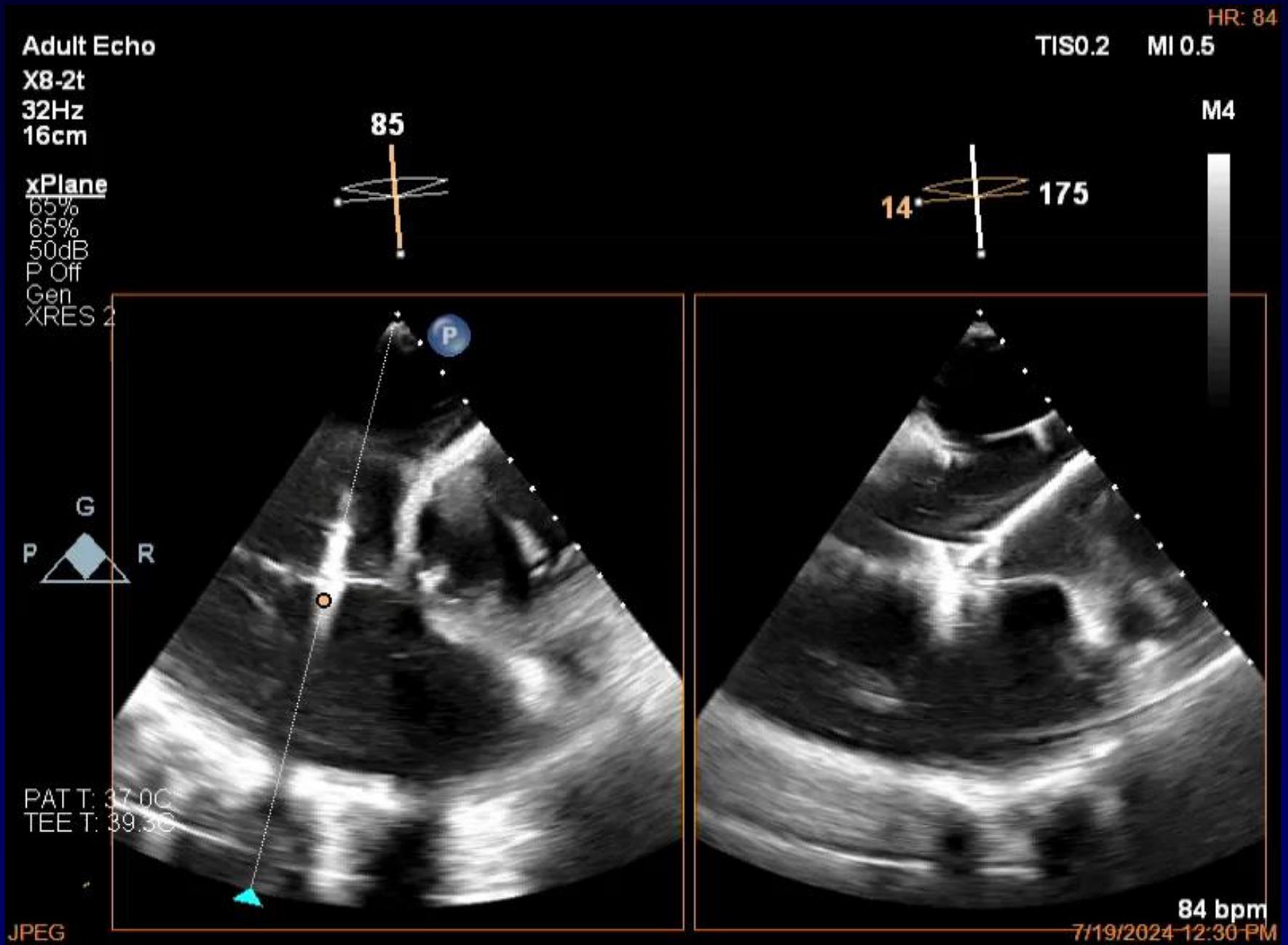




1.

2.

Опускание грипперов на плечи клипсы



Adult Echo

X8-2t
20Hz
16cm

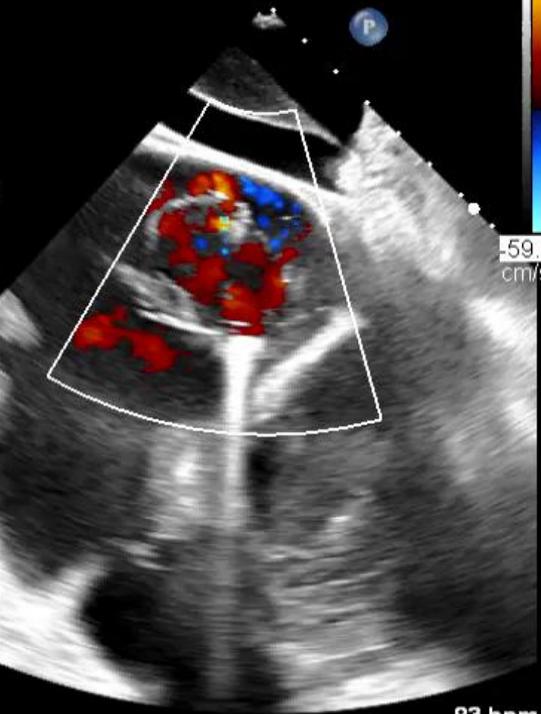
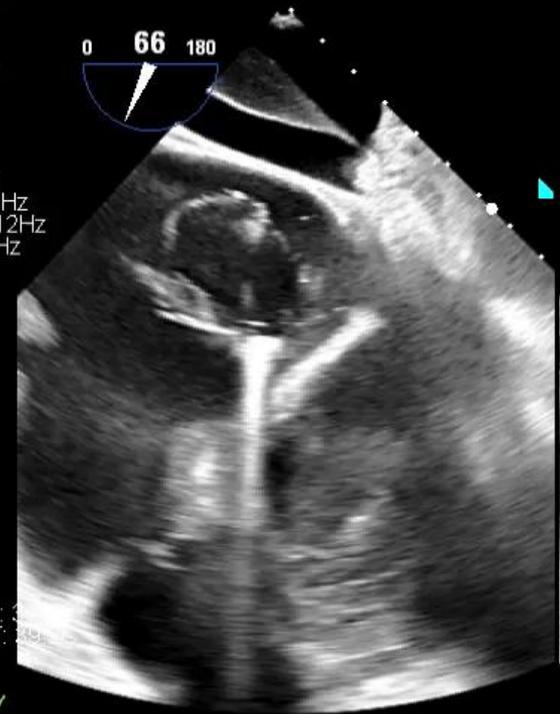
TIS0.6 MI 0.3

HR: 83

2D
69%
C 50
P Off
Gen



CF
32%
6804Hz
WF 6.12Hz
4.4MHz



PAT T: 37.0C
TEE T: 38.9C

PEG

83 bpm
7/19/2024 12:42 PM

CF
32%
6467Hz
WF 5.82Hz
4.4MHz



PAT T: 37.0C
TEE T: 38.9C

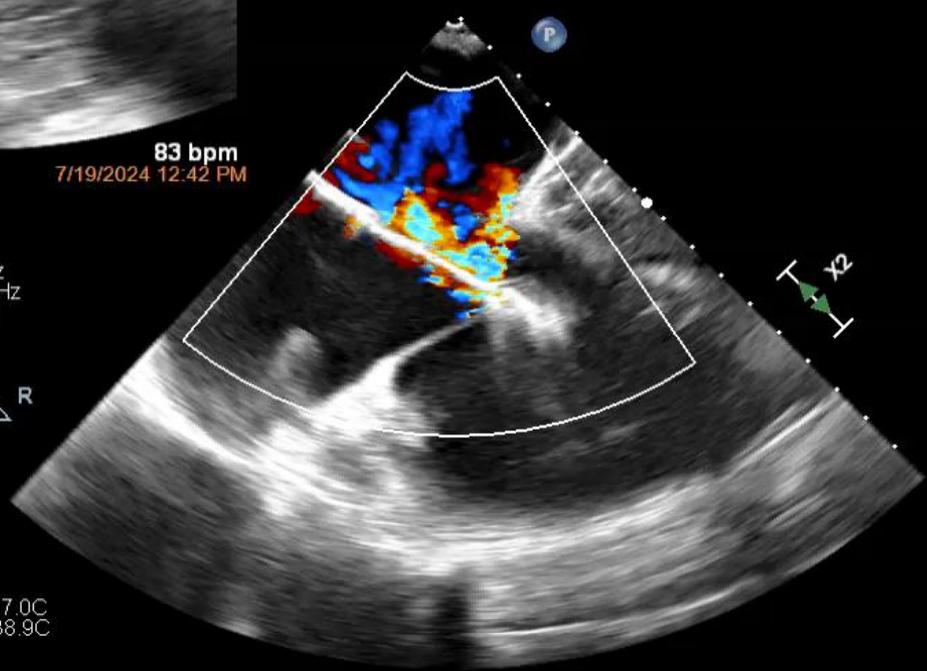
JPEG

TIS0.7 MI 0.3

HR: 83

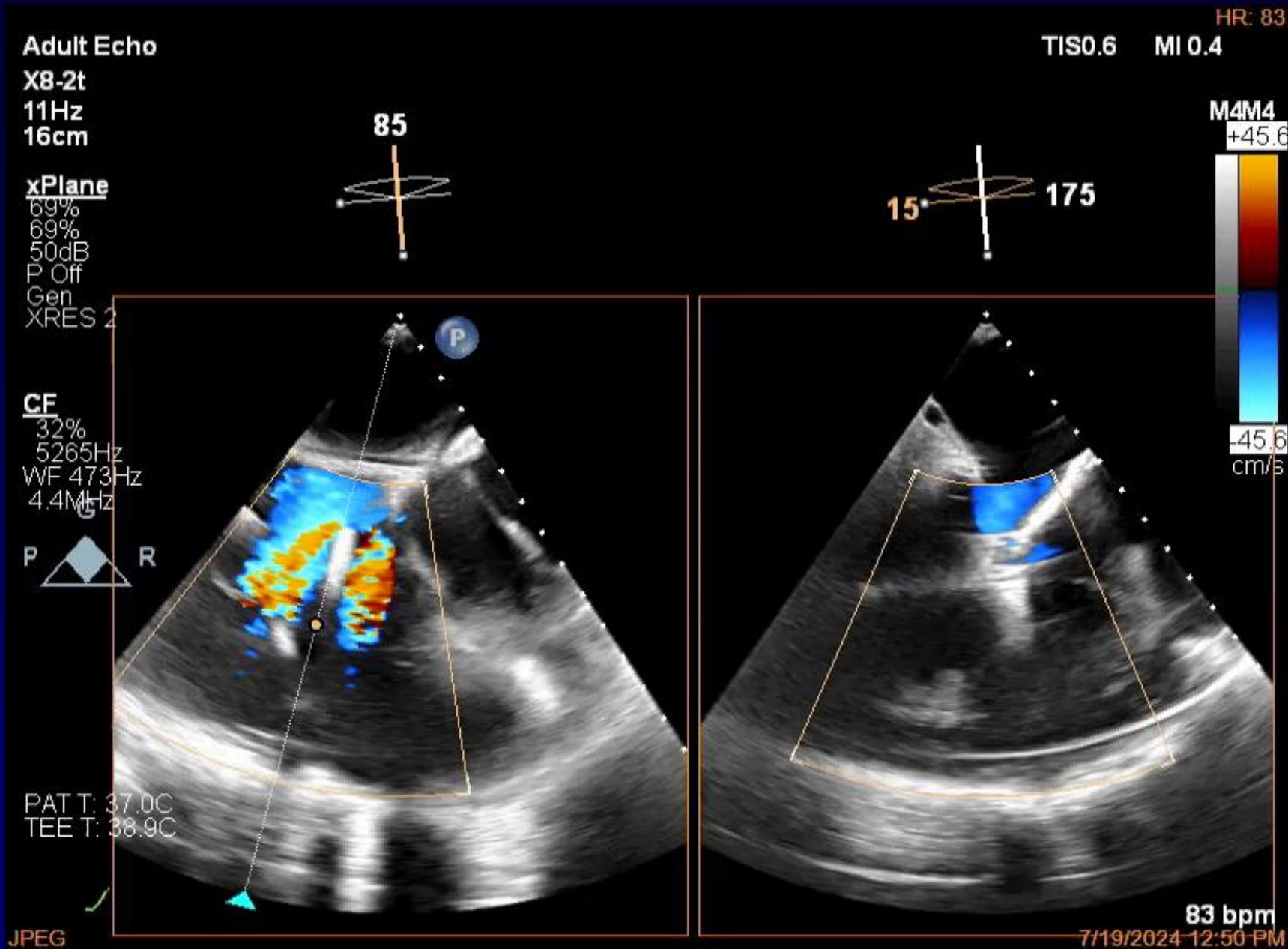
M4 M4
+56.1

-56.1
cm/s

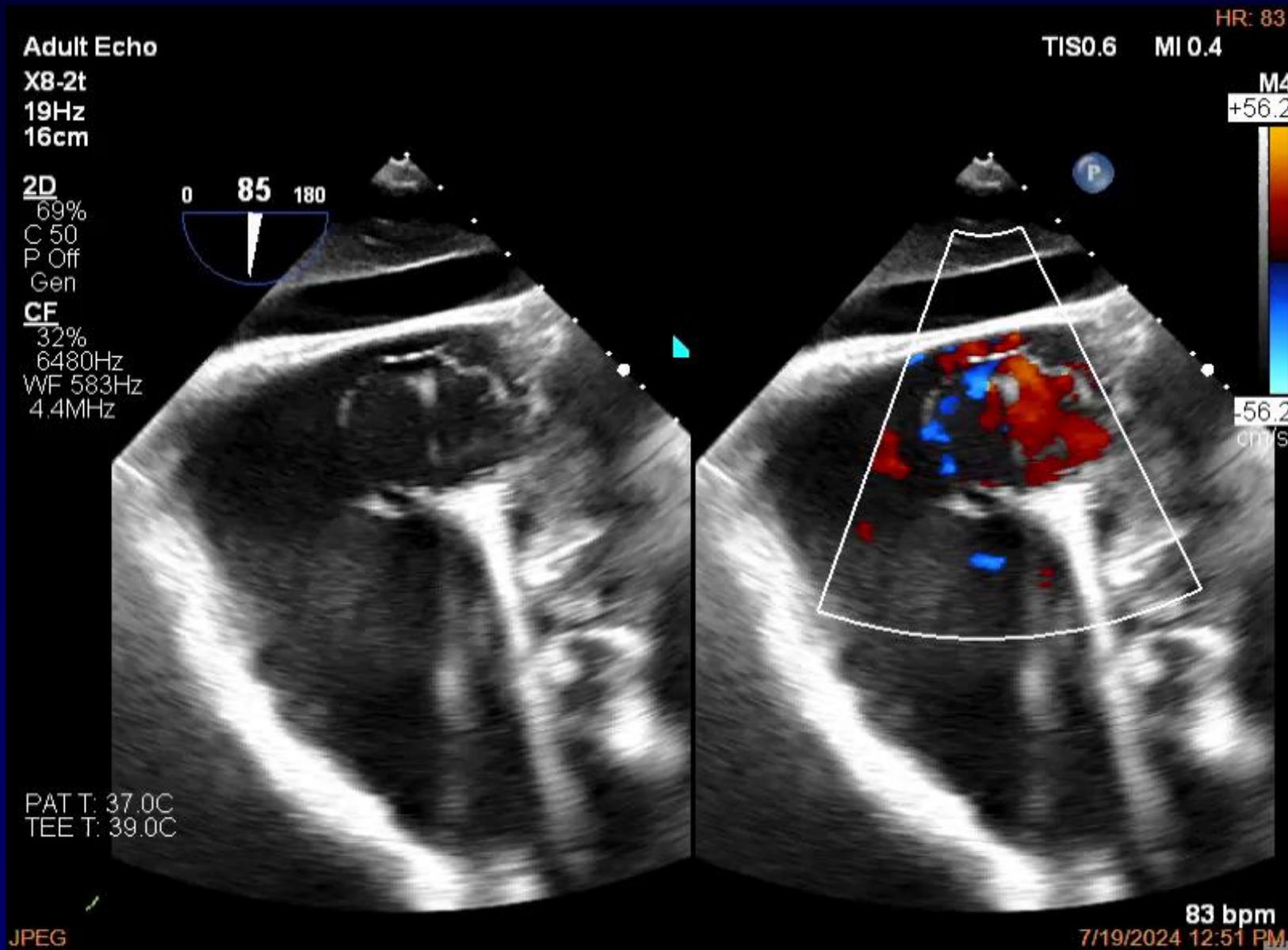


83 bpm
7/19/2024 12:45 PM

Неполное закрытие клипсы



Оценка захвата створок



Adult Echo

X8-2t
13Hz
16cm

2D
69%
C 50
P Off
Gen

CF
32%
5368Hz
WF 483Hz
4.4MHz

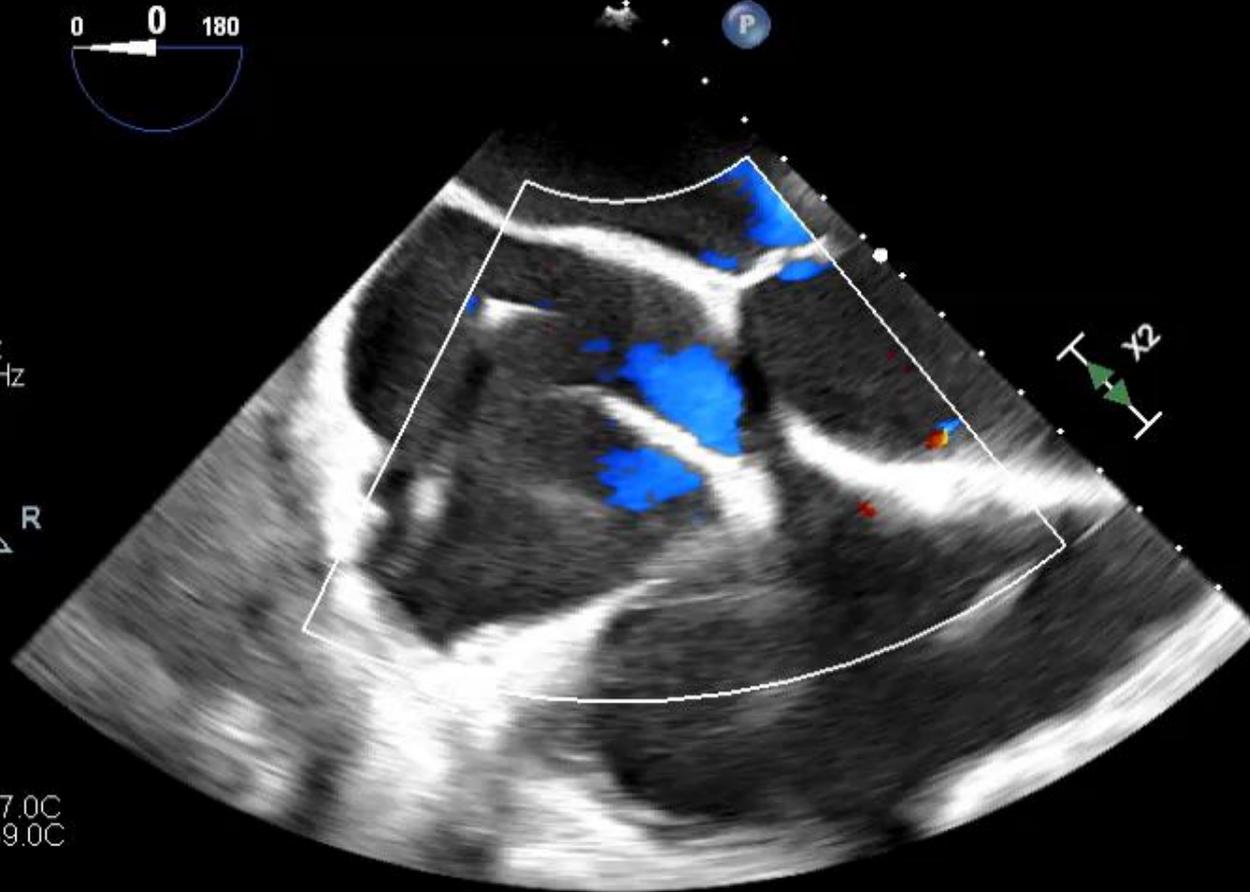


PAT T: 37.0C
TEE T: 39.0C

JPEG

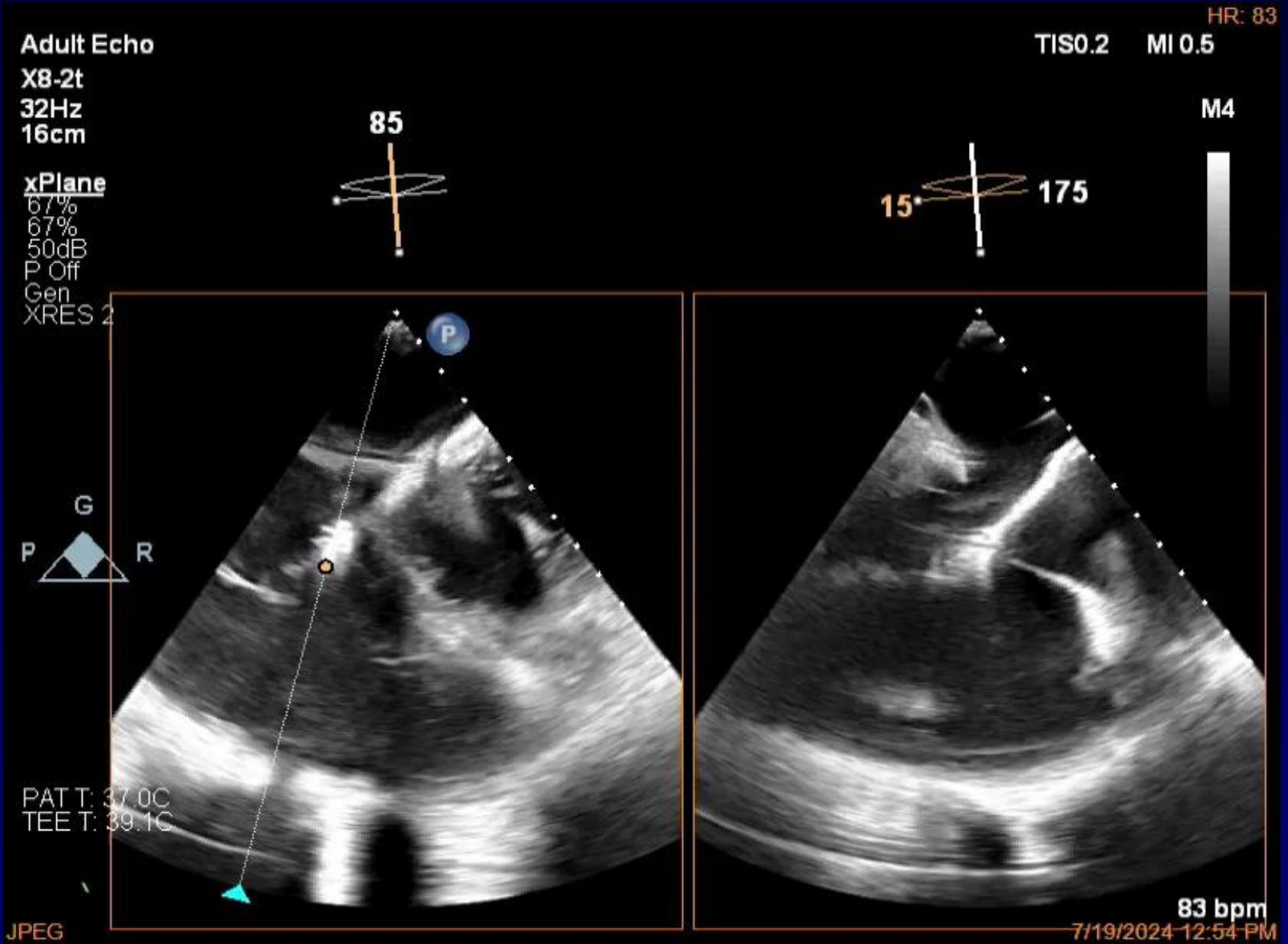
HR: 83
TIS0.7 MI 0.4

M4 M4
+46.5

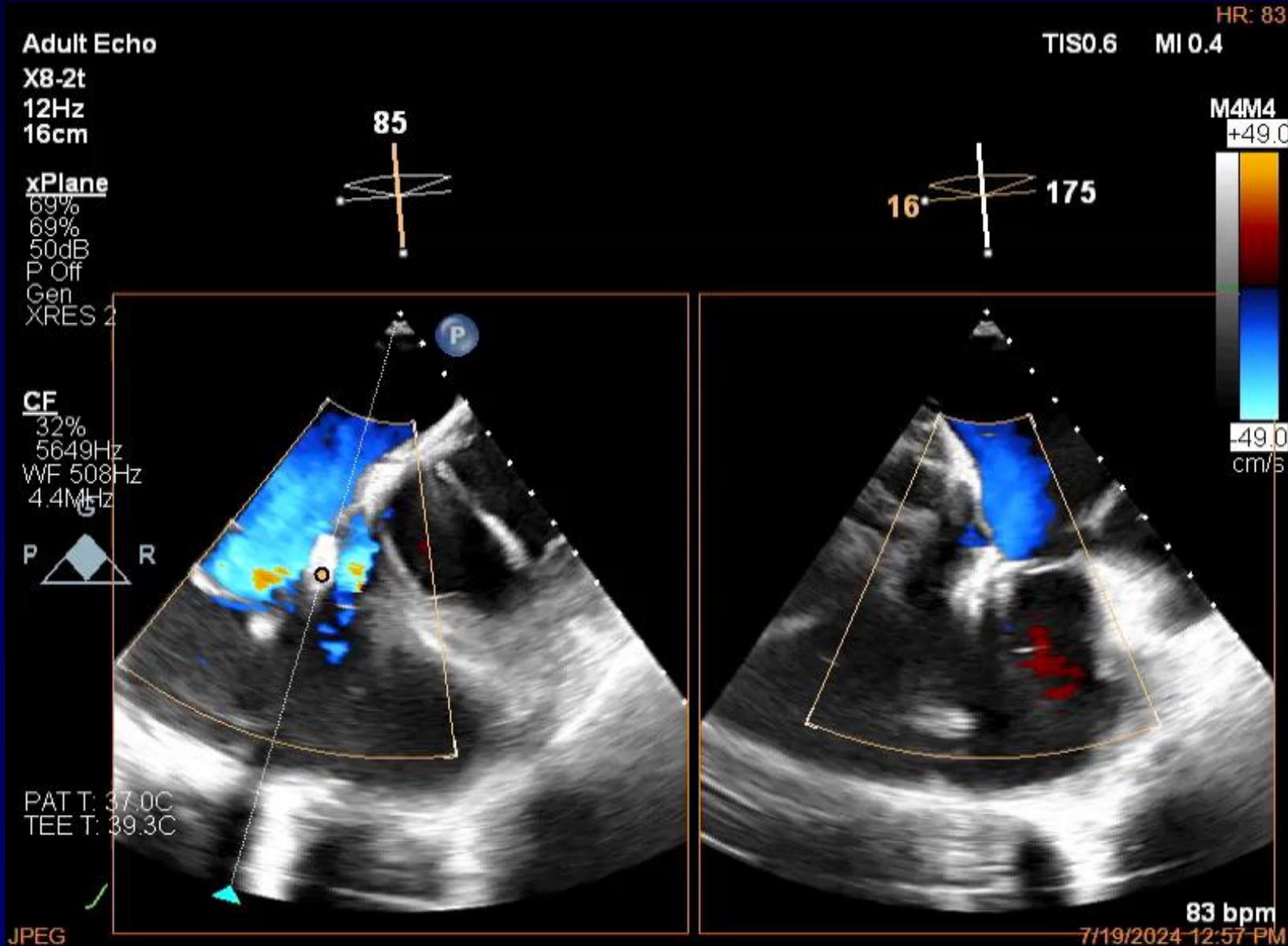


83 bpm
7/19/2024 12:53 PM

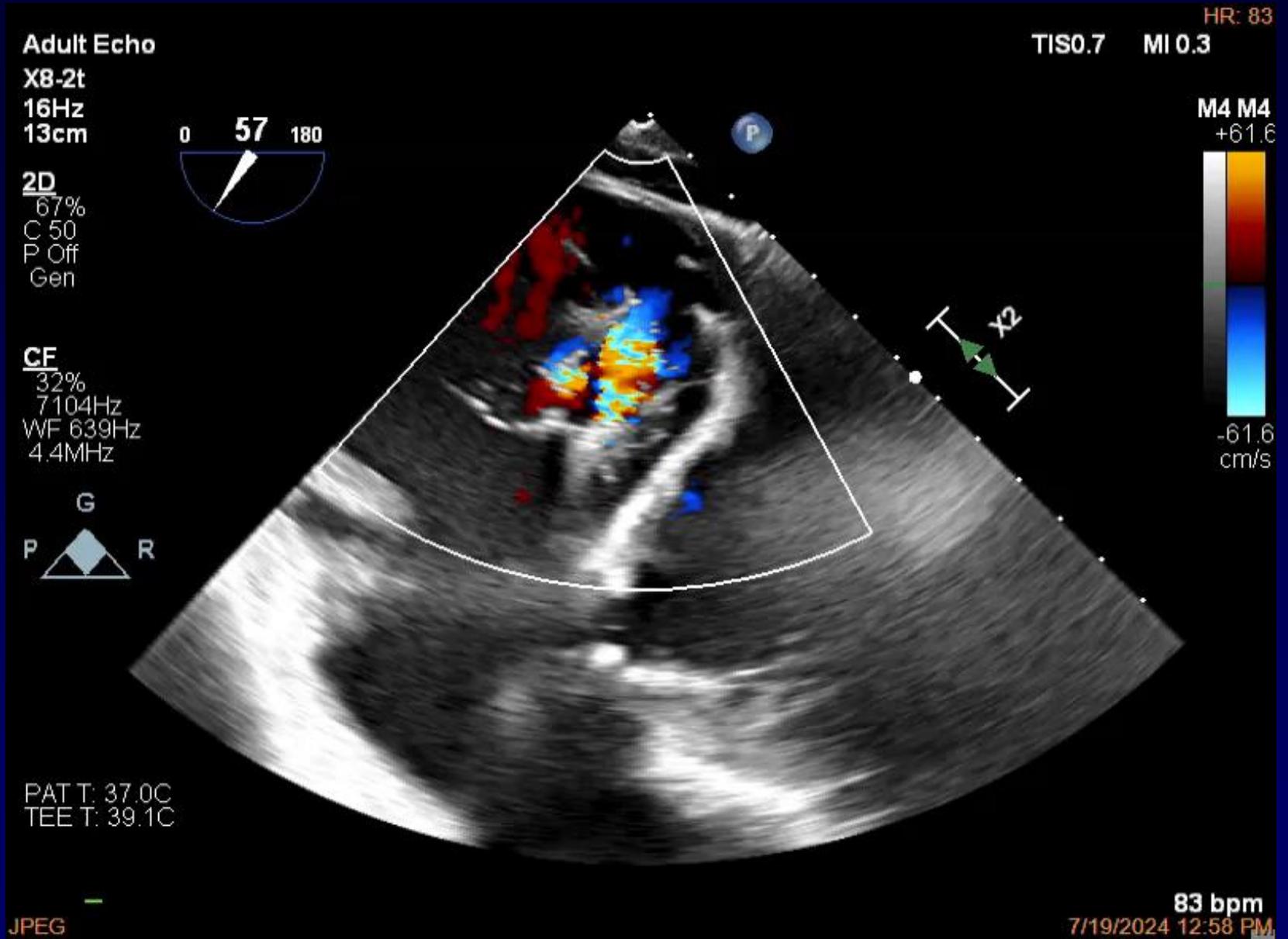
Полное закрытие клипсы



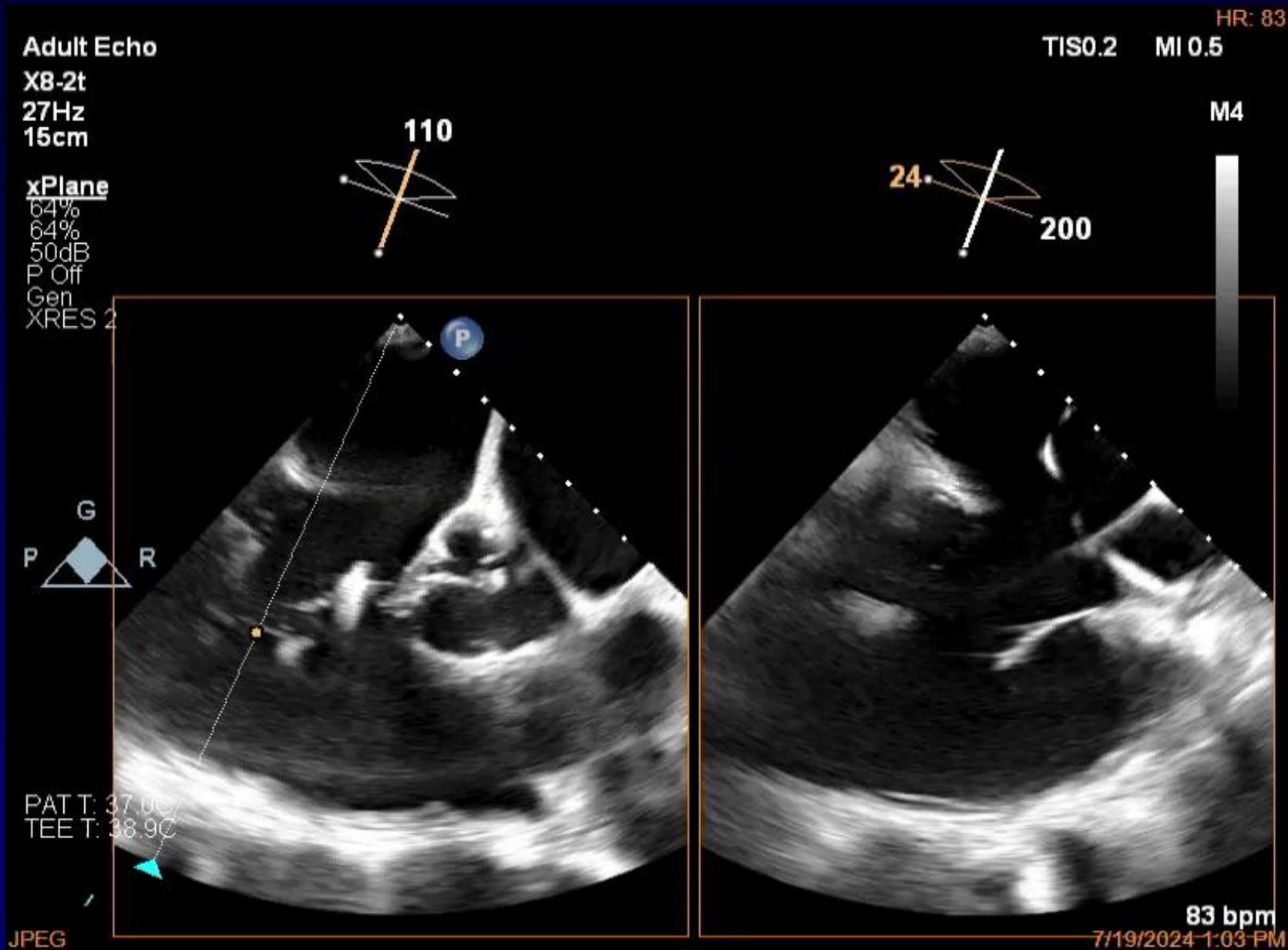
Отсоединение системы доставки от клипсы



Контроль фиксации клипсы



Планирование установки 2-й клипсы



Adult Echo

X8-2t

53Hz

15cm

2D

64%

C 50

P Off

Gen

0 105 180



HR: 76

TISO.2

MI 0.5

M4



PAT T: 37.0C
TEE T: 38.8C

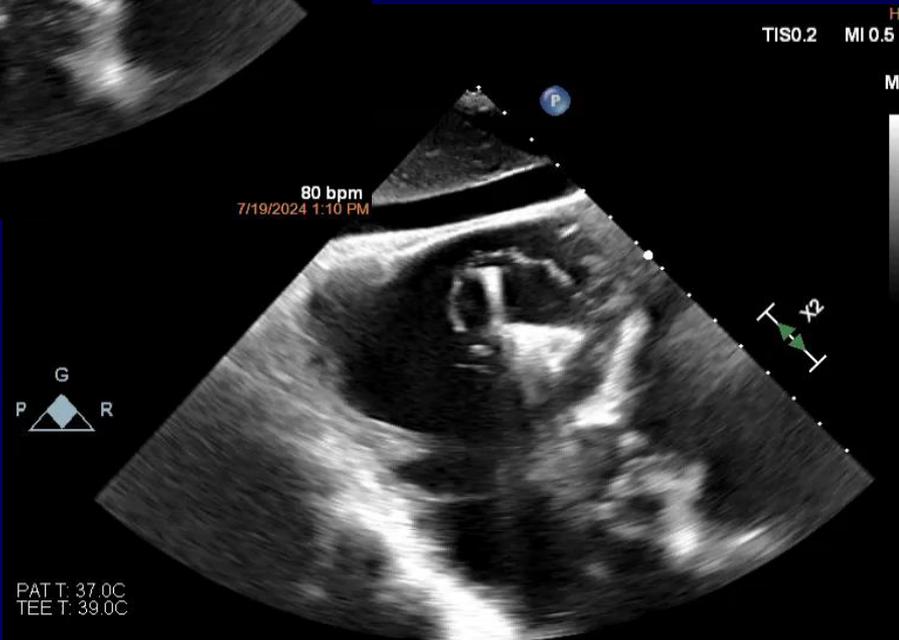
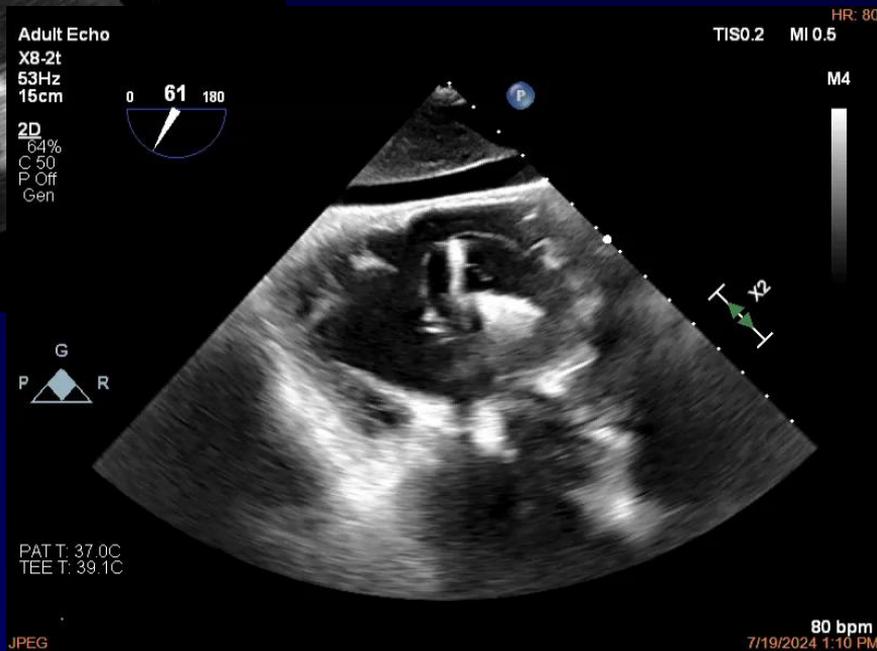
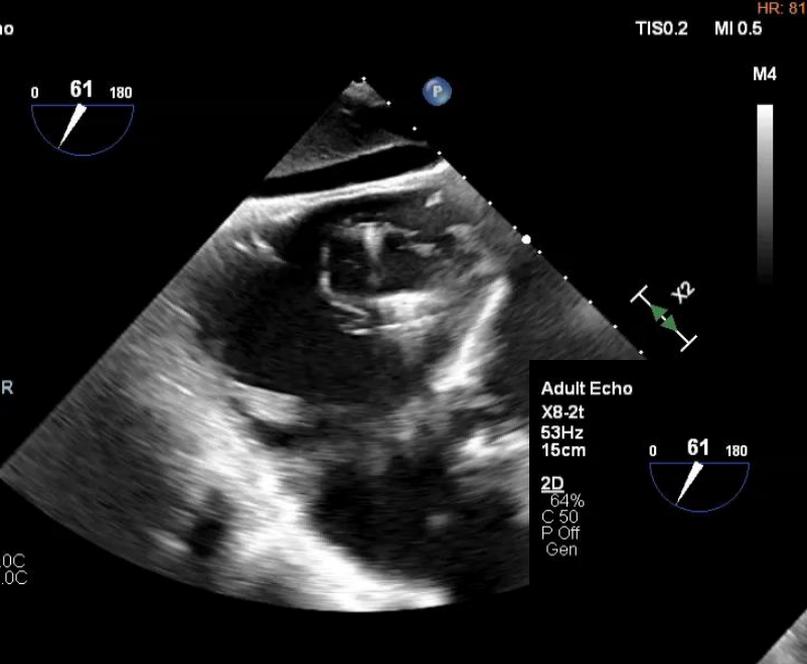


JPEG

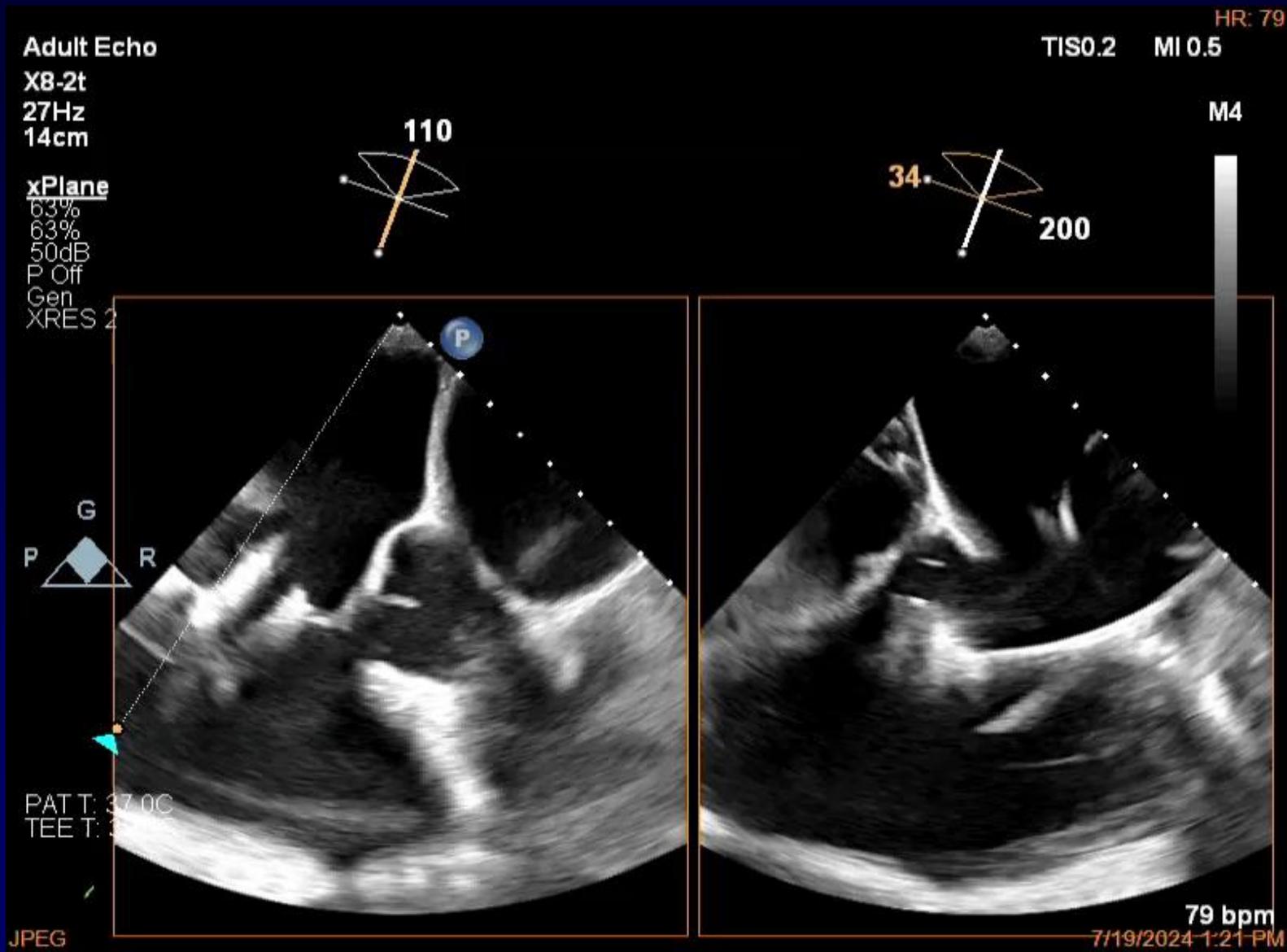
76 bpm

7/19/2024 1:05 PM

Позиционирование 2-й клипсы



Попытка захвата створок 2-й клипсой



HR: 78

TIS0.2 MI 0.5

M4

Adult Echo

X8-2t

27Hz

14cm

xPlane

63%

63%

50dB

P Off

Gen

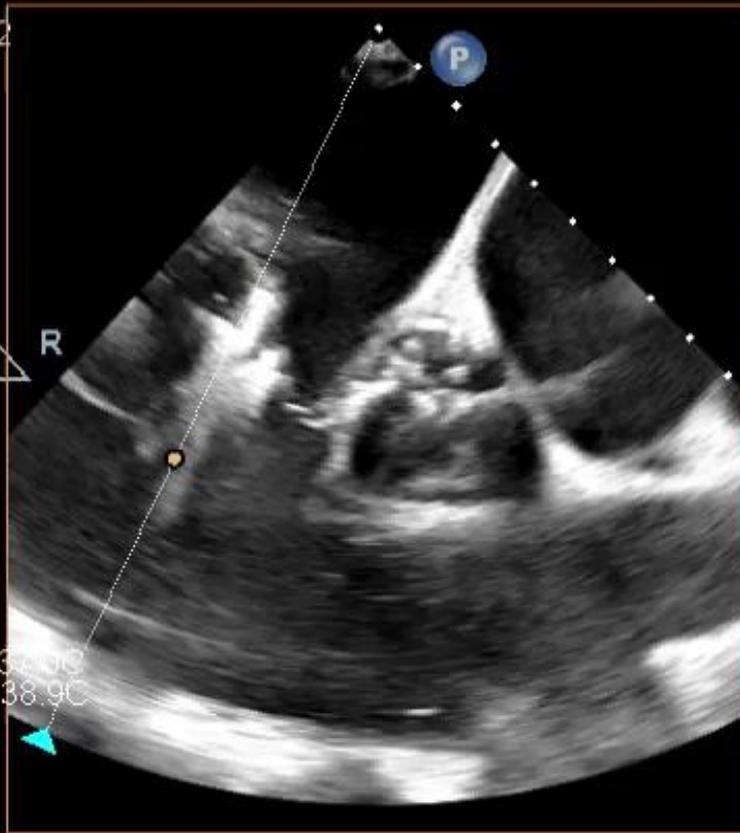
XRES 2

105



25

195



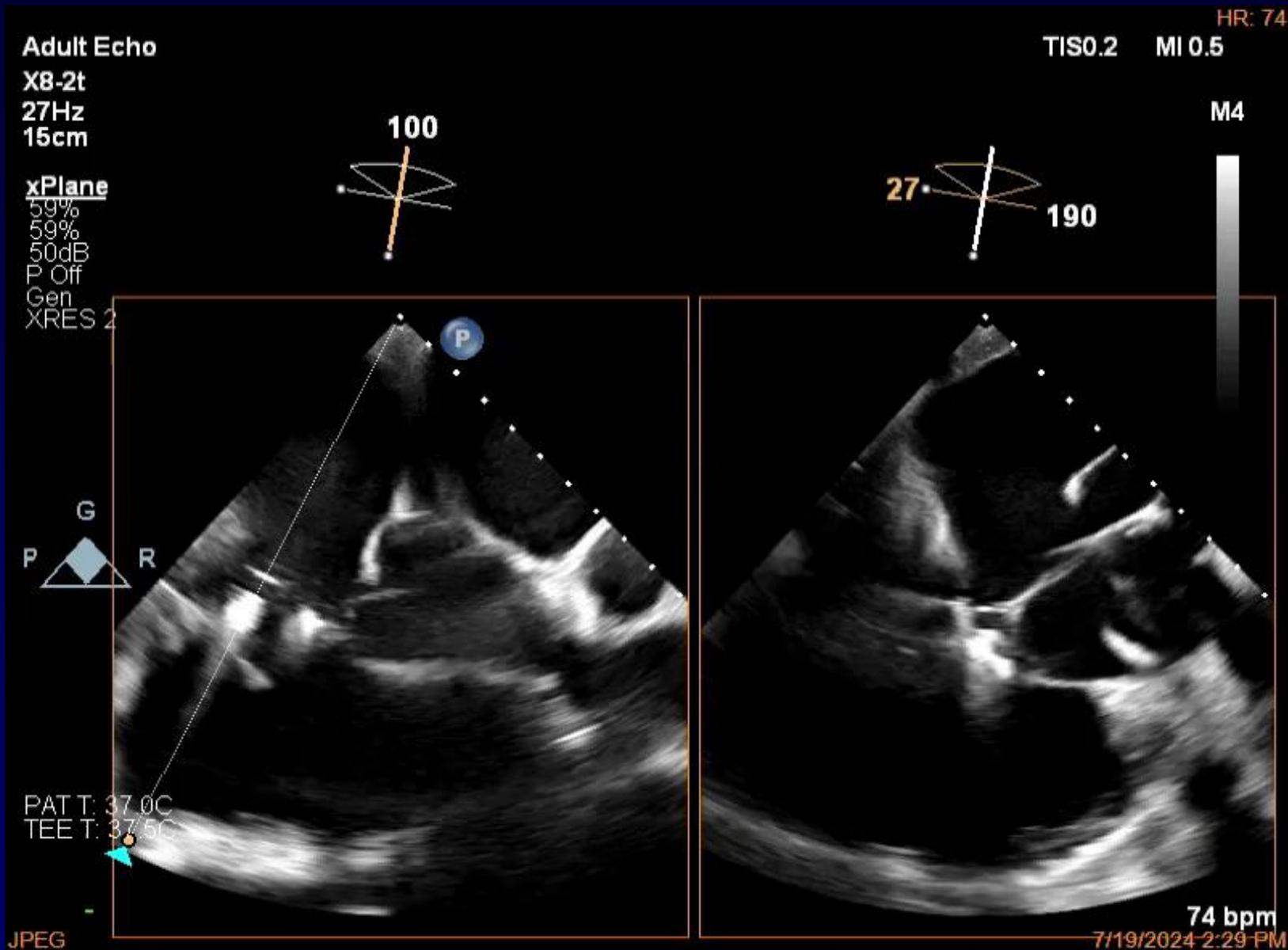
PAT T: 38.9C
TEE T: 38.9C

JPEG

78 bpm

7/19/2024 1:28 PM

Независимый захват (grasping) створок 2-й клипсой



Adult Echo

X8-2t

18Hz

15cm

2D

61%

C 50

P Off

Gen

CF

32%

6061Hz

WF 545Hz

4.4MHz

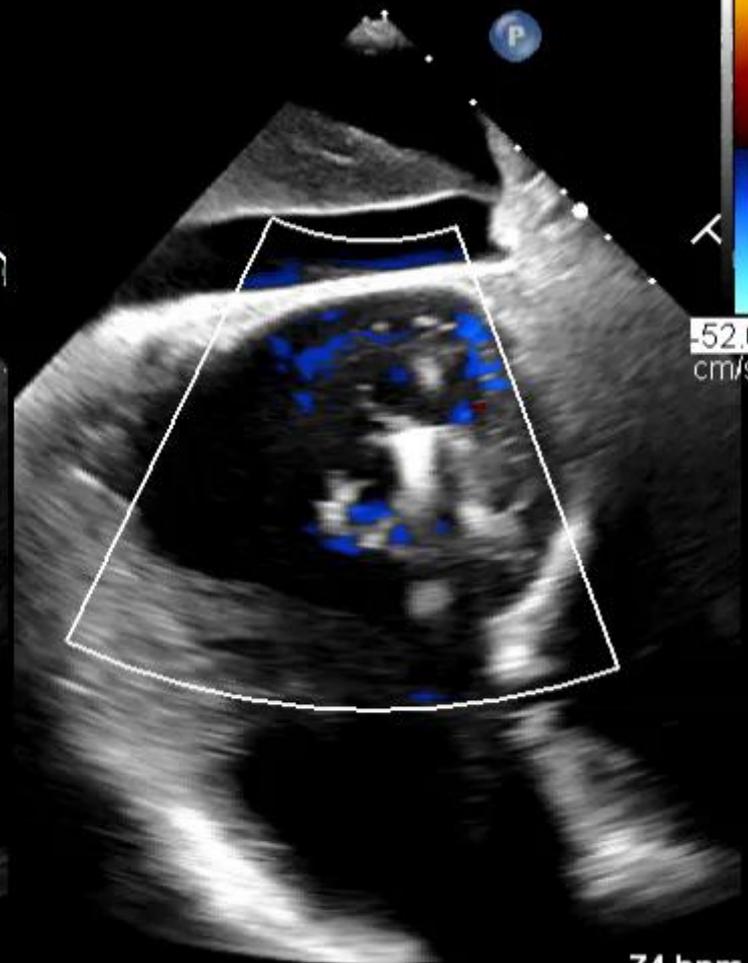
0 65 180



PAT T: 37.0C
TEE T: 38.2C

JPEG

HR: 74
TISO.6 MI 0.4



M4
+52.6

-52.6
cm/s

74 bpm

7/19/2024 2:30 PM

Adult Echo

X8-2t
32Hz
15cm

xPlane

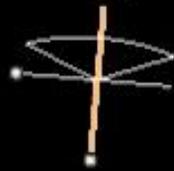
59%
59%
50dB
P Off
Gen
XRES 2

TIS0.2 MI 0.5

HR: 74

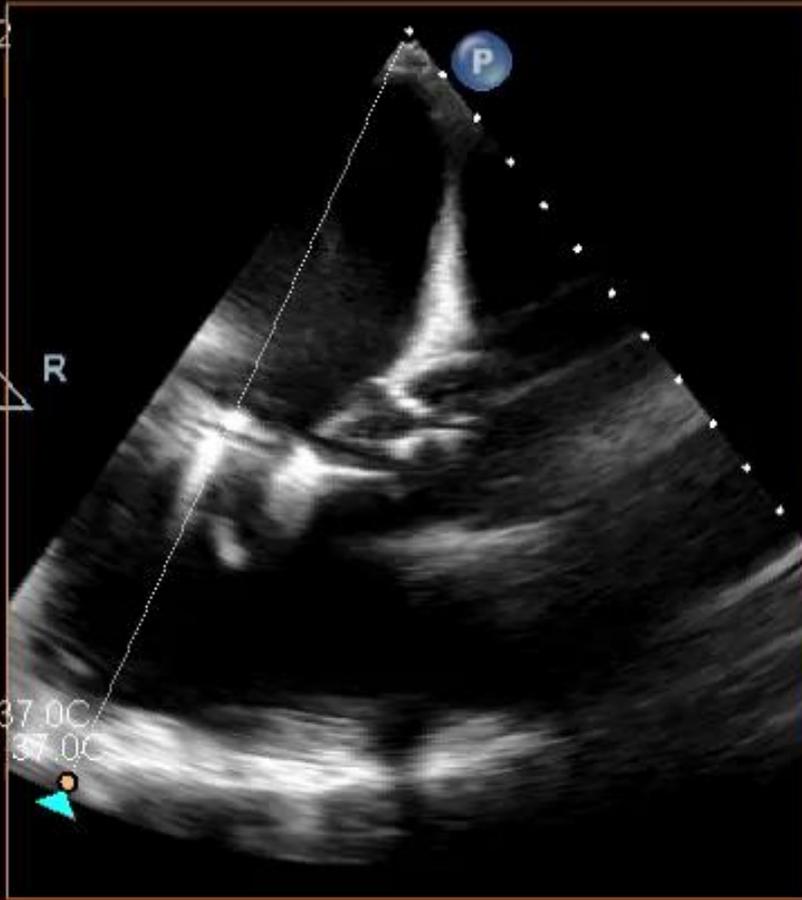
M4

95



24

185



PAT T: 37.0C
TEE T: < 37.0C



74 bpm

7/19/2024 2:33 PM

JPEG

Adult Echo

X8-2t

53Hz

15cm

2D

59%

C 50

P Off

Gen



TISO.2

MI 0.5

HR: 74

M4



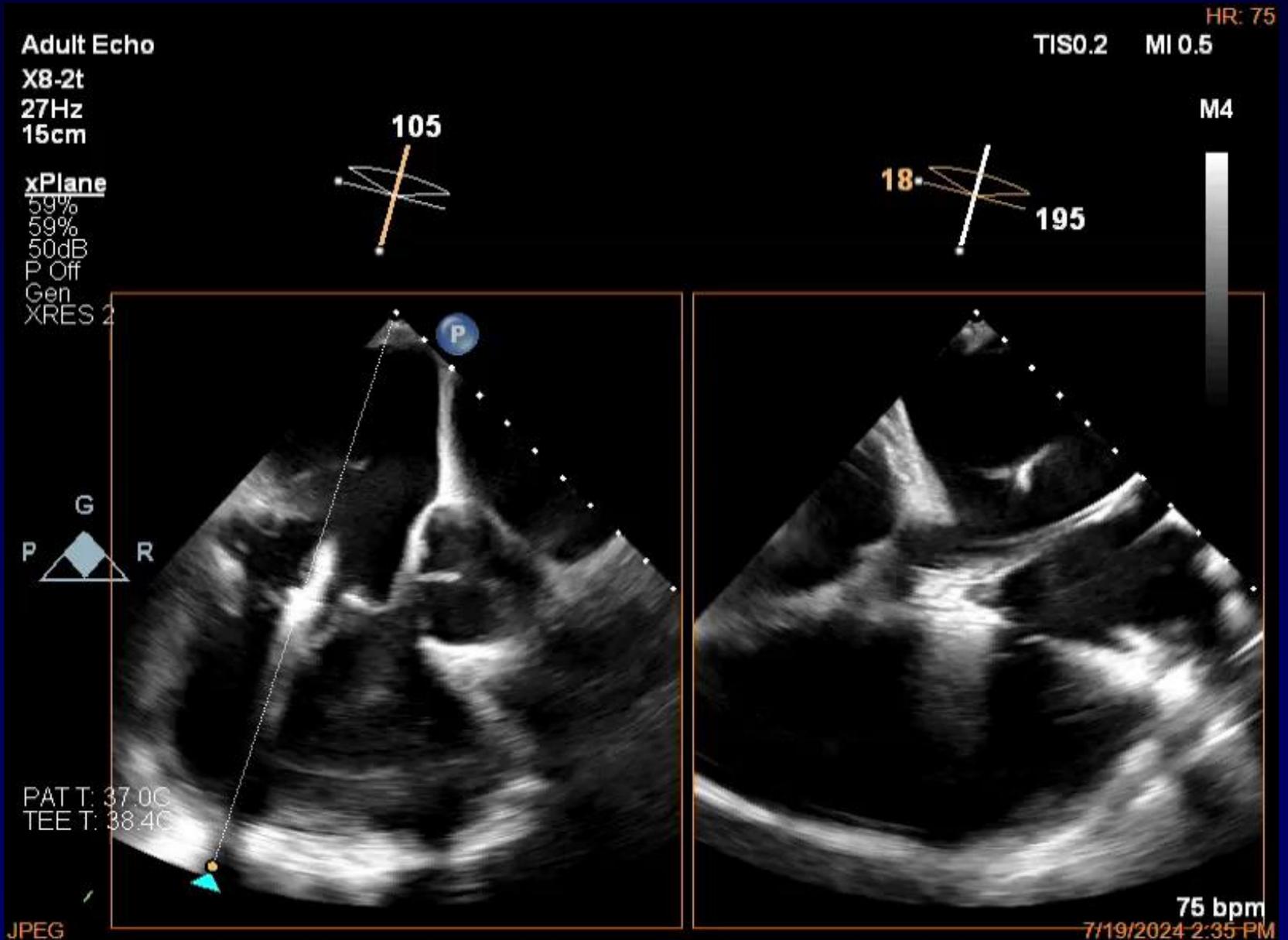
PAT T: 37.0C
TEE T: 37.6C

JPEG

74 bpm

7/19/2024 2:33 PM

Выход септальной створки из 2-й клипсы



Adult Echo

TIS0.6 MI 0.4

X8-2t

11Hz

15cm

110



xPlane

61%

61%

50dB

P Off

Gen

XRES 2

21



200

M4M4

+48.0



-48.0

cm/s

CF

32%

5537Hz

WF 498Hz

4.4MHz

5



PAT T: 37.0C

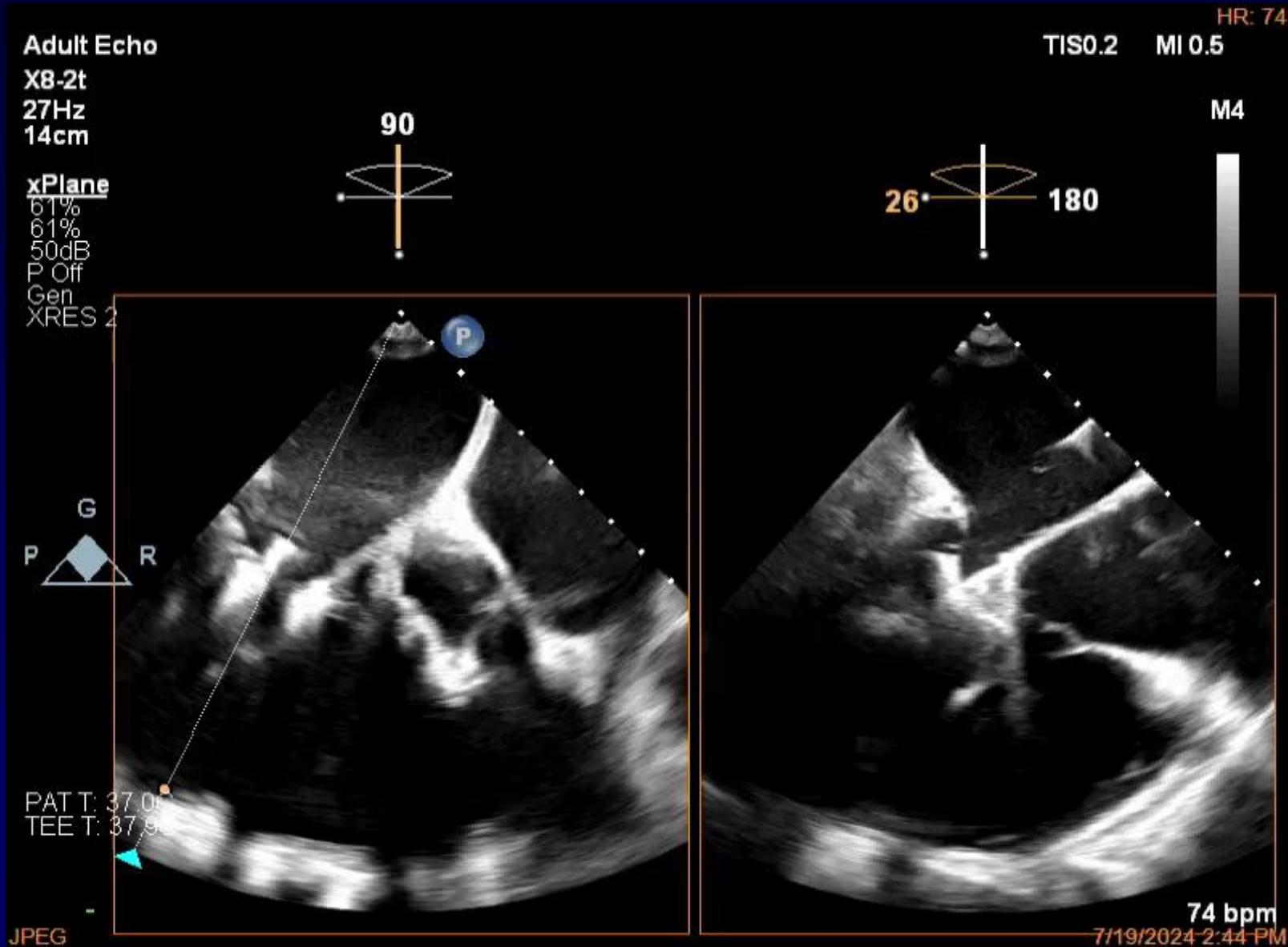
TEE T: 38.5C

JPEG

*** bpm

7/19/2024 2:35-PM

Попытка захвата створок 2-й клипсой



Adult Echo

X8-2t

11Hz

14cm

xPlane

63%

63%

50dB

P Off

Gen

XRES 2

CF

32%

5604Hz

WF 504Hz

4.4MHz



PAT T: 37.0C

TEE T: 38.4C

JPEG

HR: 74

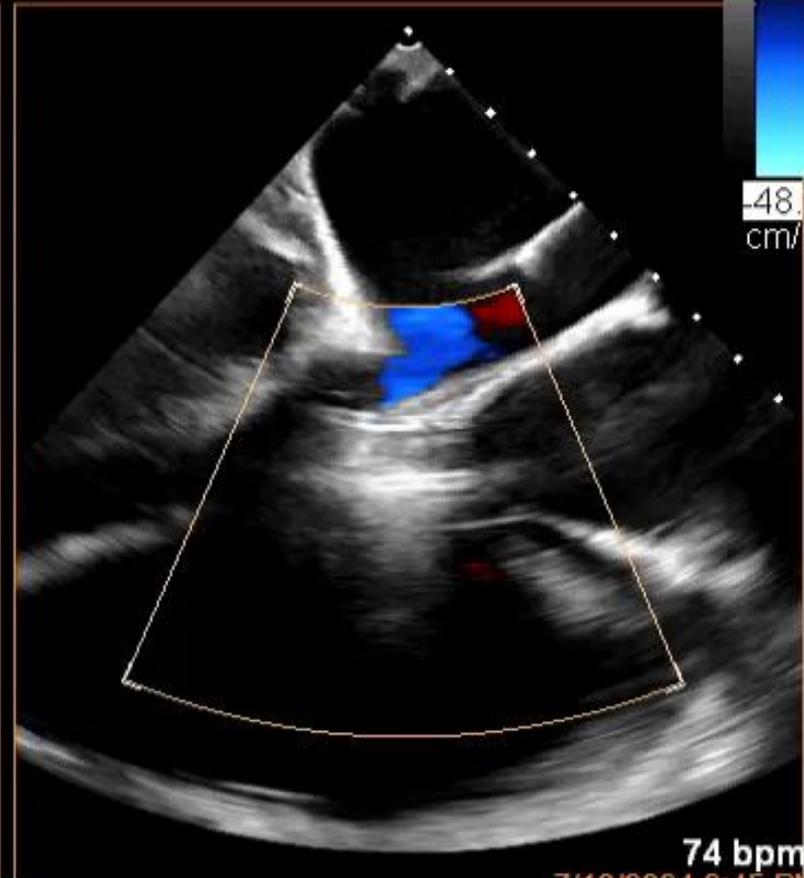
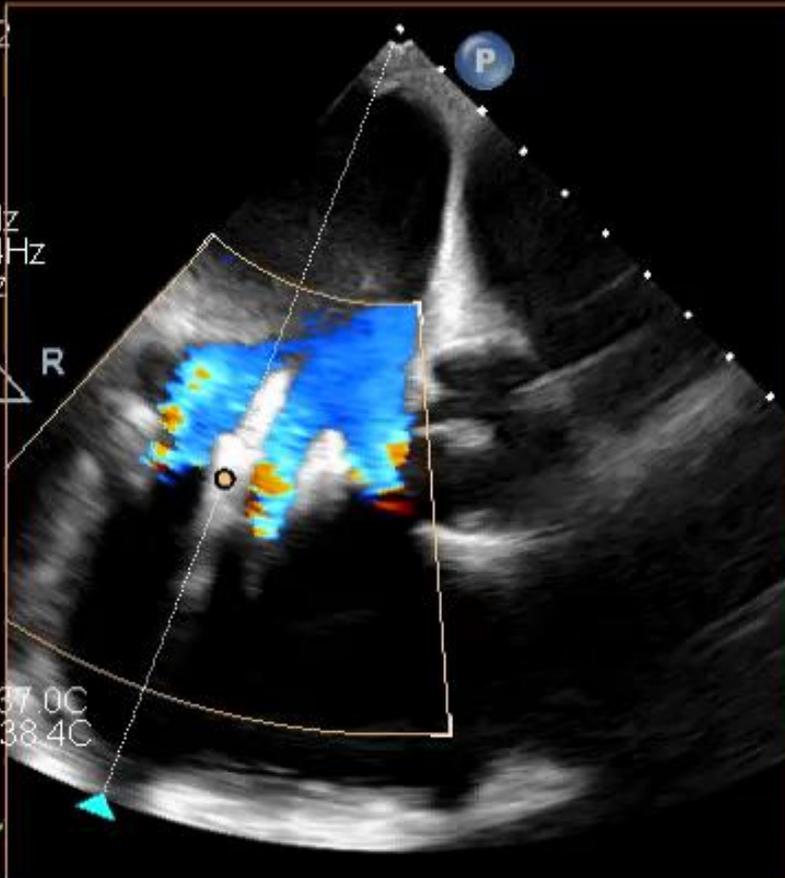
TIS0.6 MI 0.4

M4M4

+48.6

-48.6

cm/s



74 bpm

7/19/2024 2:45 PM

Adult Echo
X8-2t
53Hz
15cm

TIS0.2 MI 0.5

HR: 75

M4



2D
62%
C 50
P Off
Gen



PAT T: 37.0C
TEE T: 38.8C

JPEG

TIS0.2 MI 0.5

HR: 74

M4

75 bpm
7/19/2024 2:55 PM

Gen



PAT T: 37.0C
TEE T: 38.4C

JPEG

74 bpm
7/19/2024 2:45 PM

Adult Echo
X8-2t
20Hz
15cm

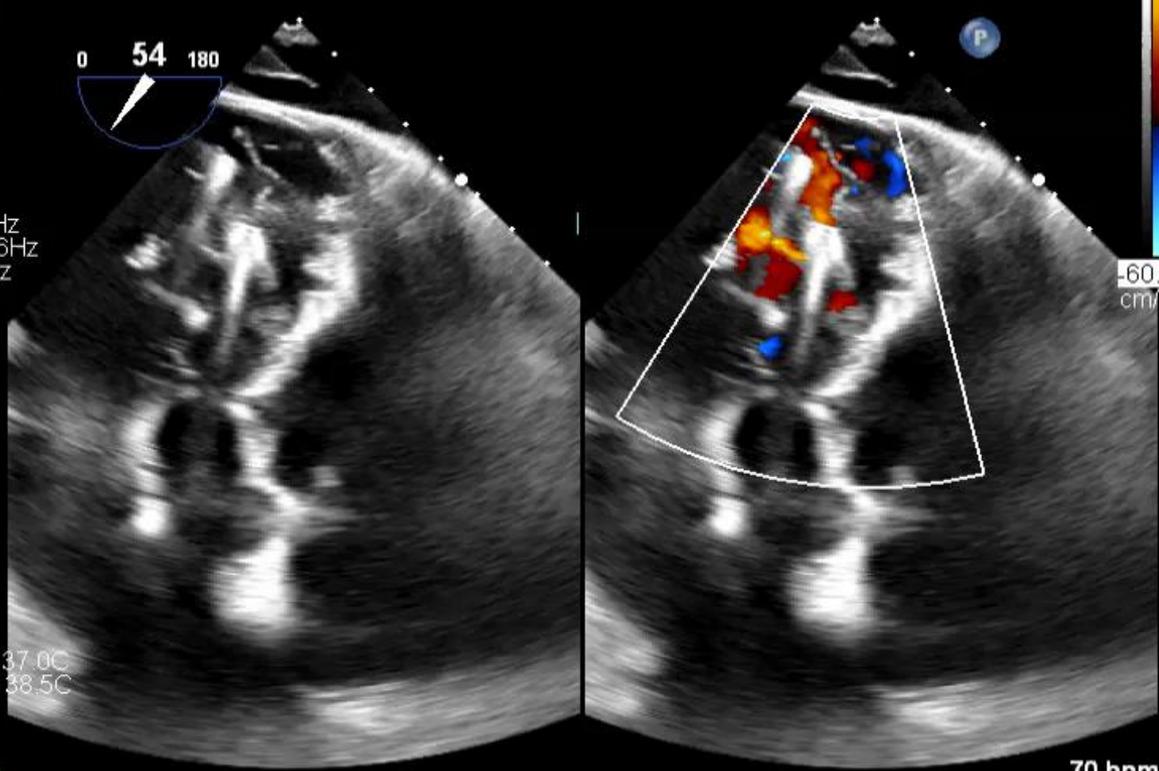
TISO.6 MI 0.3

HR: 70
M4
+60.4
-60.4
cm/s

Частичный захват створок
2-й клипсой

2D
69%
C 50
P Off
Gen
CF
32%
6961Hz
WF 626Hz
4.4MHz

0 54 180



PAT T: 37.0C
TEE T: 38.5C

JPEG

TISO.2 MI 0.5

M4

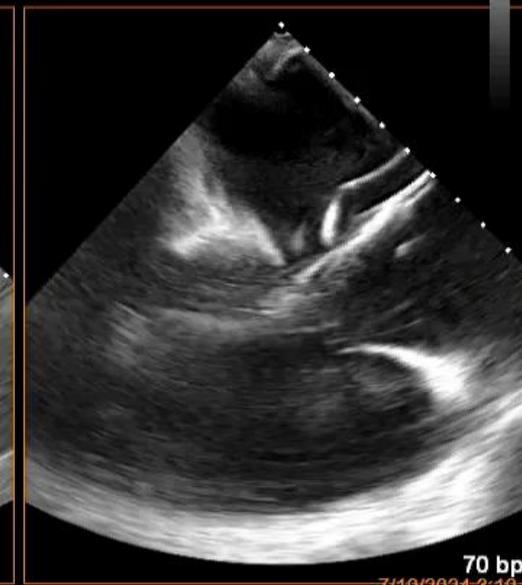
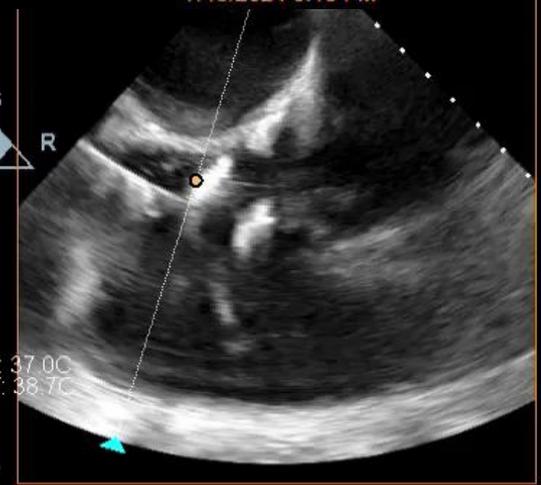
17° 160

70 bpm
7/19/2024 3:16 PM

G
P R

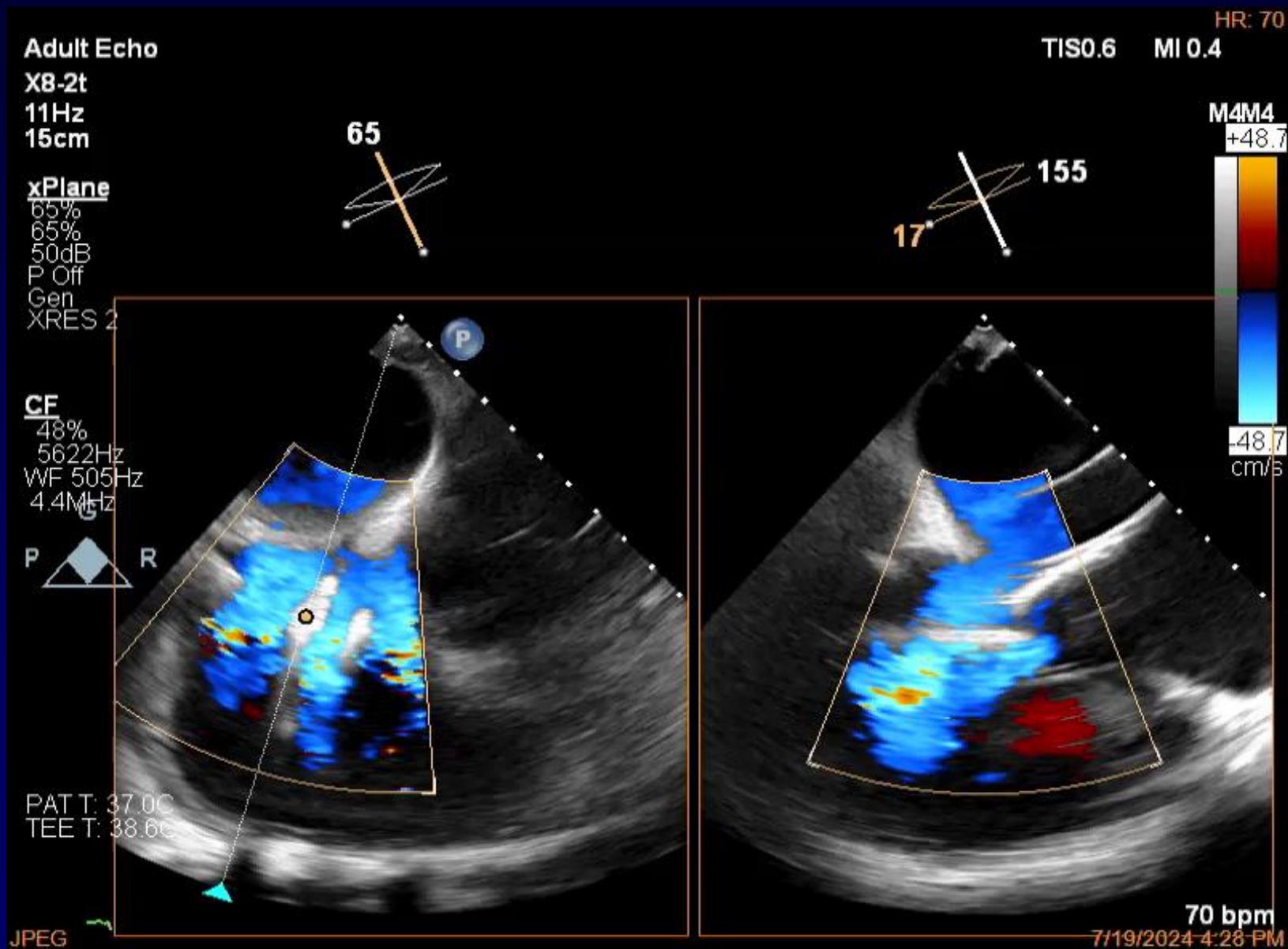
PAT T: 37.0C
TEE T: 38.7C

JPEG

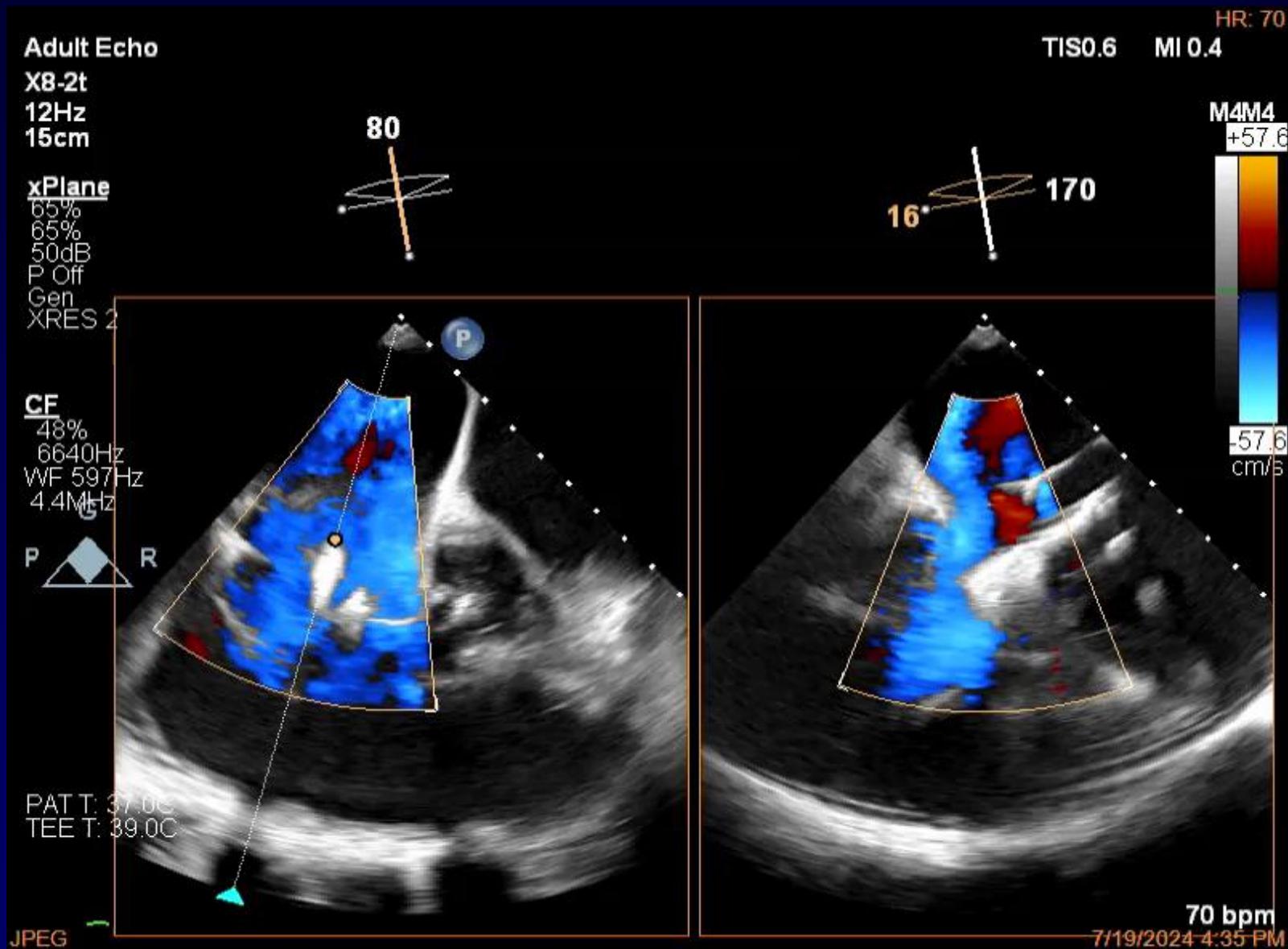


70 bpm
7/19/2024 3:19

Неудовлетворительный захват створок 2-й клипсой



Извлечение системы доставки со 2-й клипсой



Adult Echo

X8-2t
53Hz
15cm



2D
63%
C 50
P Off
Gen



PAT T: 37.0C
TEE T: 38.3C

JPEG

TISO.2 MI 0.5

M4



HR: 70
TISO.6 MI 0.4

M4 M4
+53.1



68 bpm
7/19/2024 4:39 PM

4070
6119Hz
WF 550Hz
4.4MHz

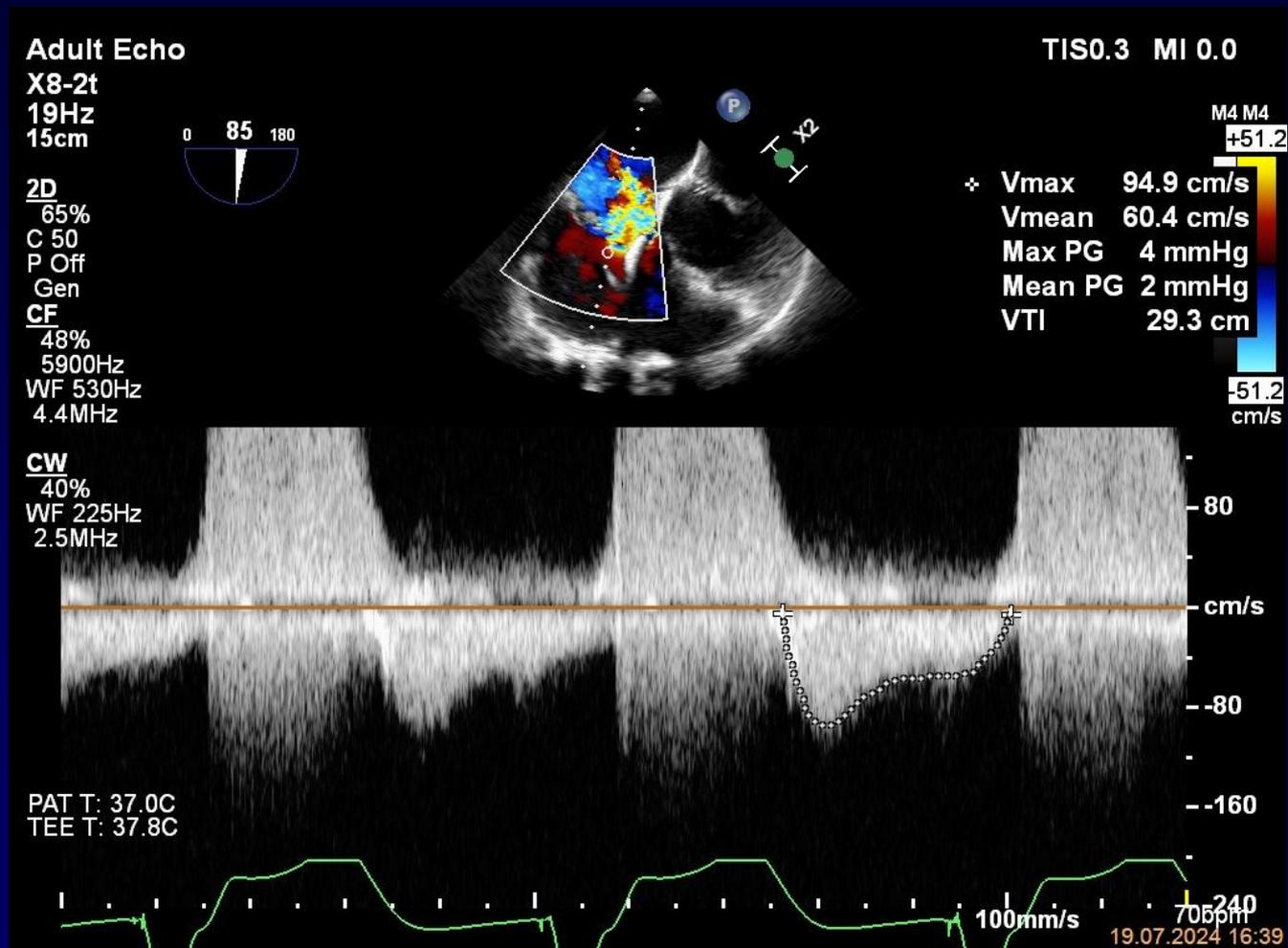


PAT T: 37.0C
TEE T: 38.3C

JPEG

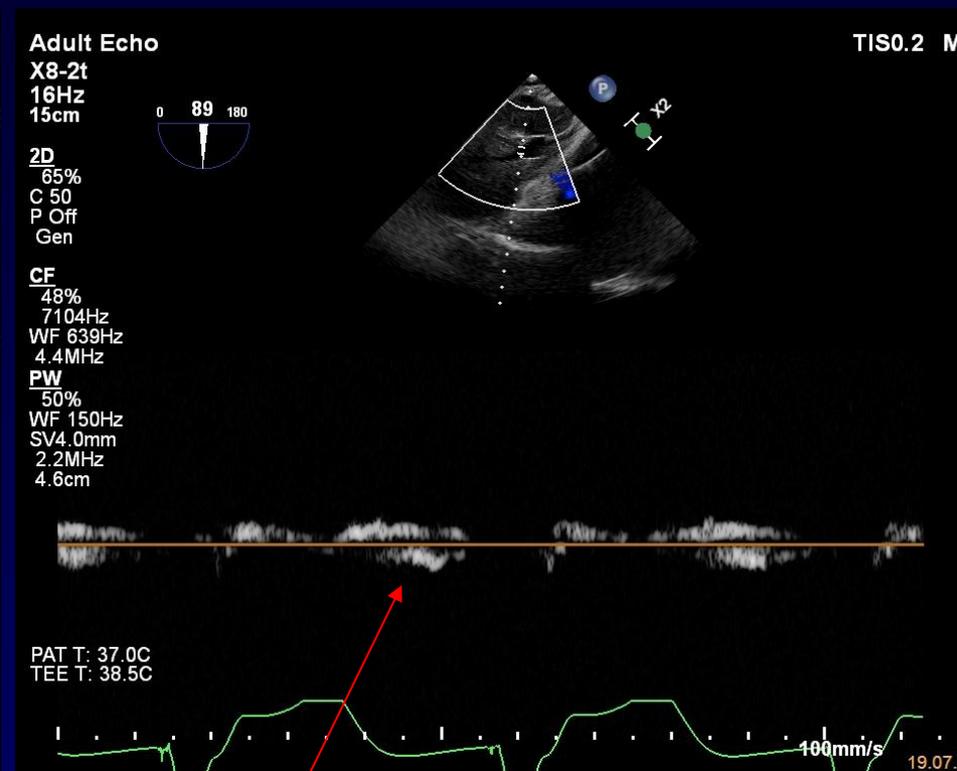
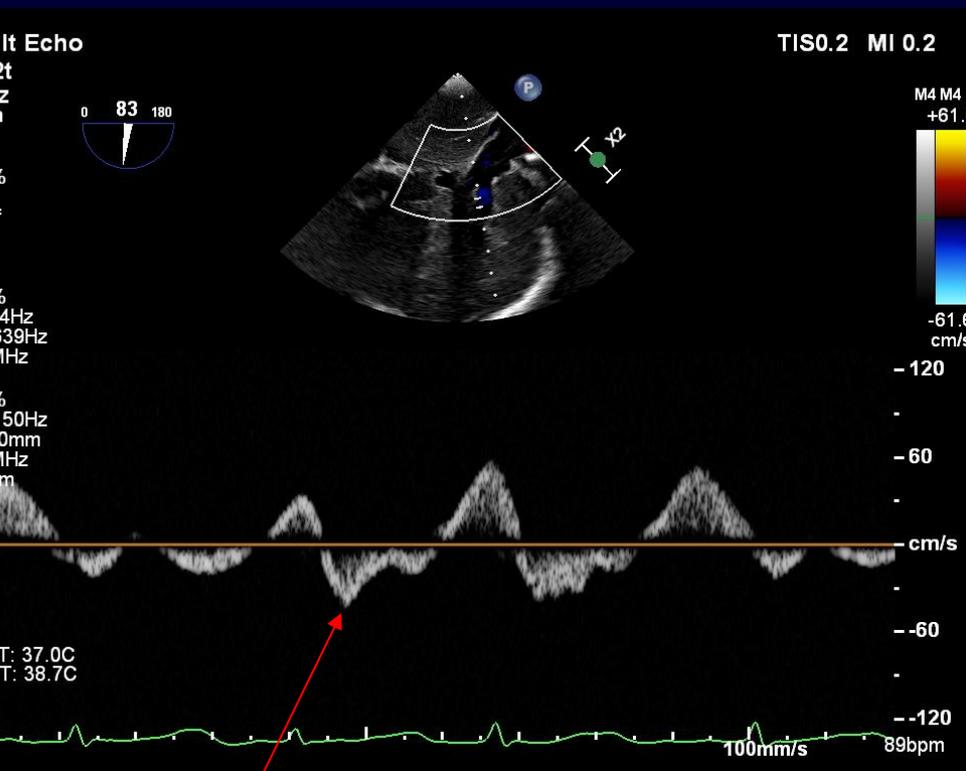
70 bpm
7/19/2024 4:40 PM

Остаточный диастолический градиент давления на ТК



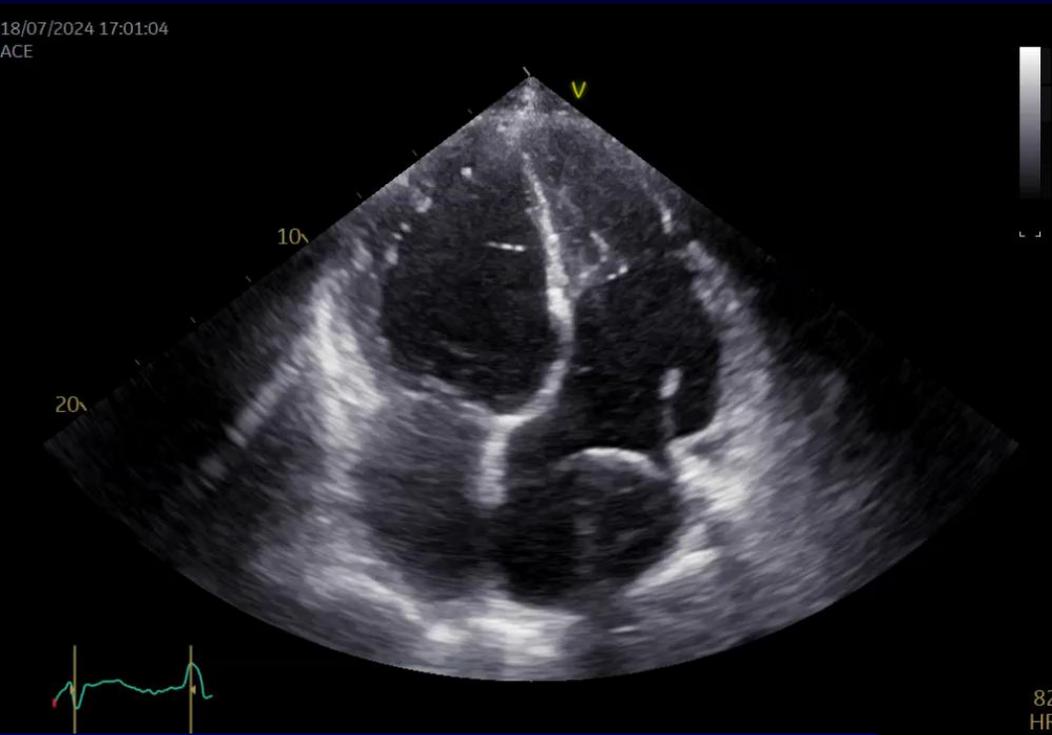
ср ГДд ТК= 2 мм рт. ст.

Заброс ТР в печеночные вены

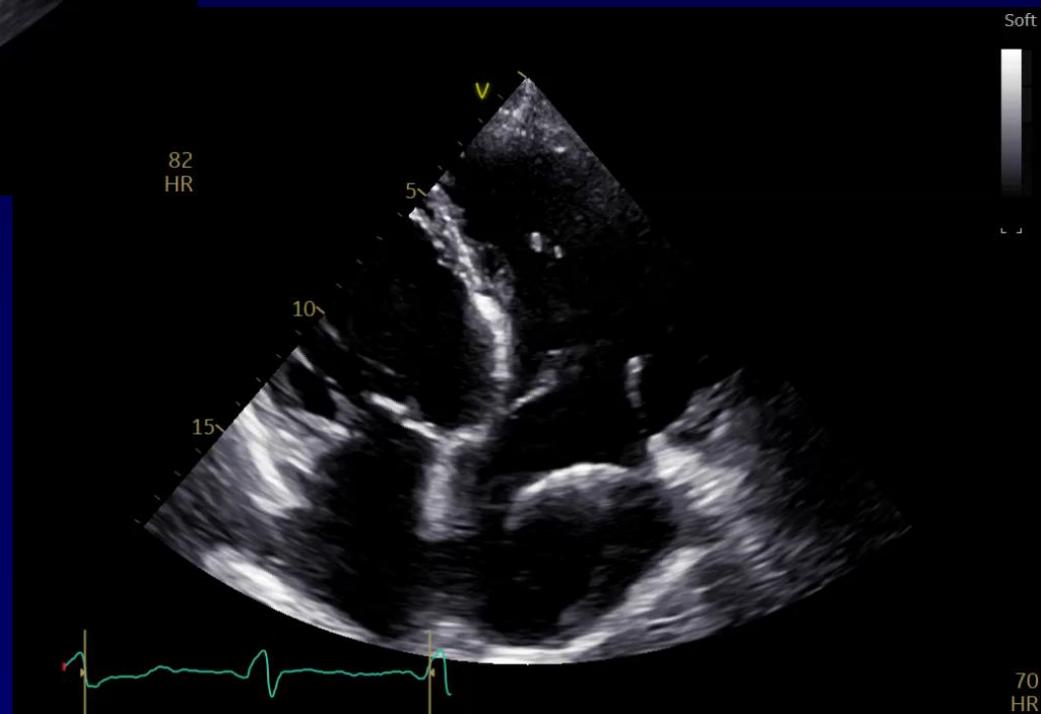


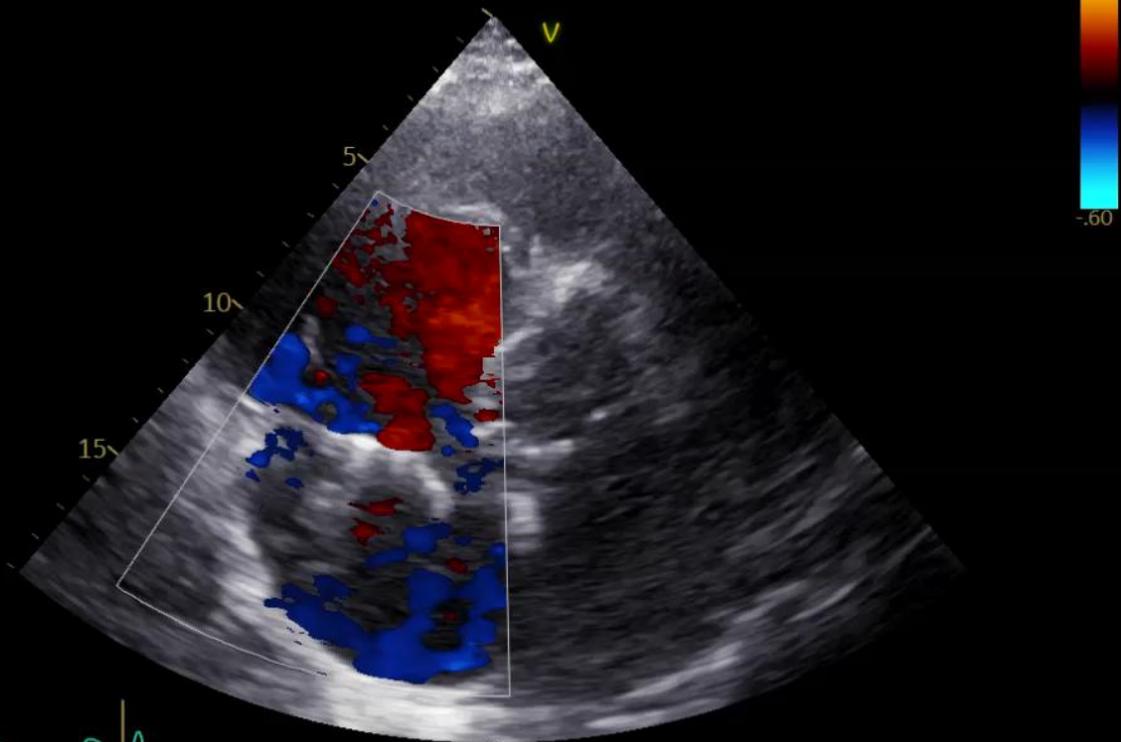
5-й день после операции

ТТЭхоКГ

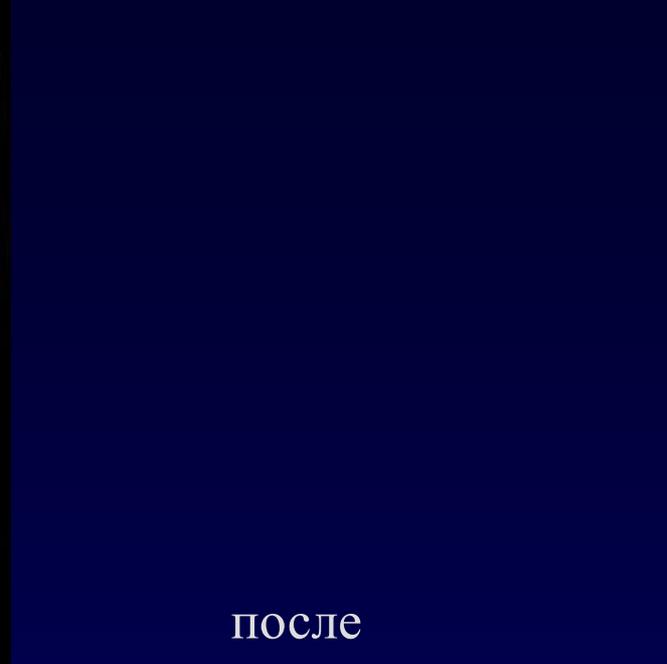


ПОСЛЕ

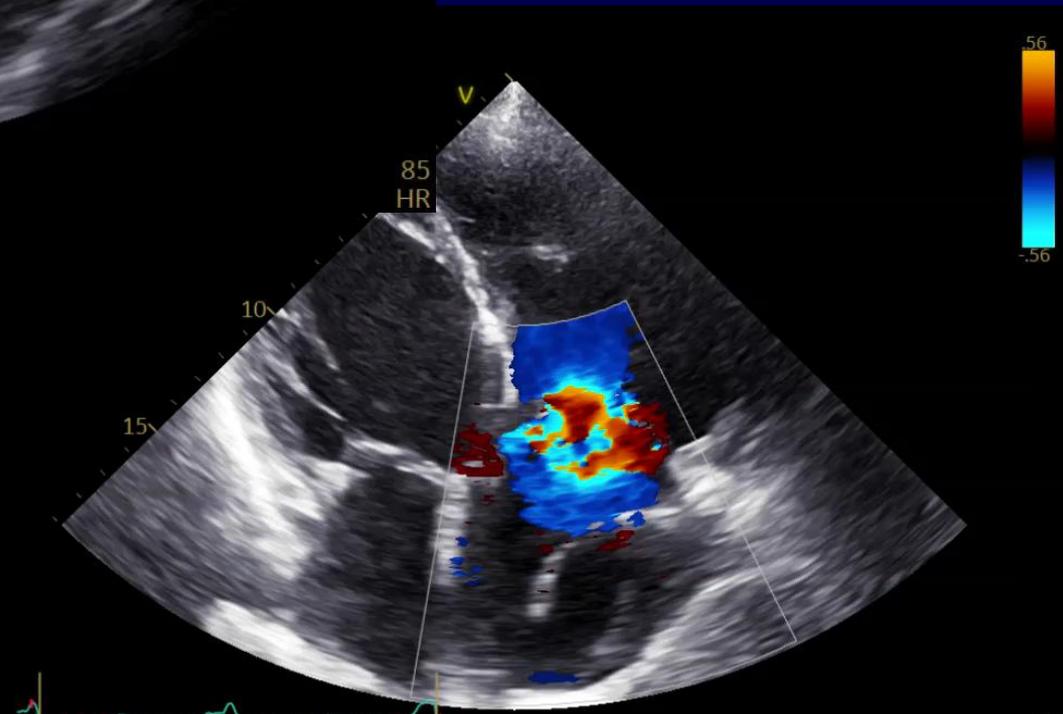




ДО



ПОСЛЕ



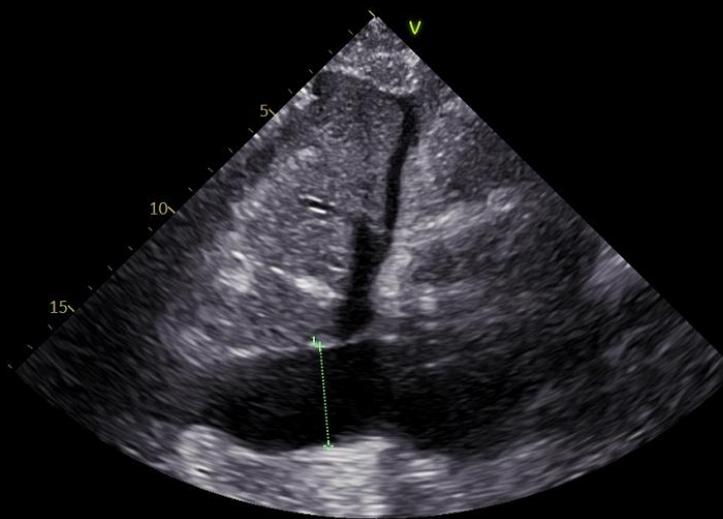
85
HR

72
HR

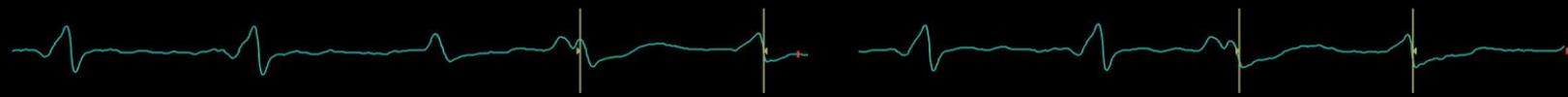
L 5.60 cm

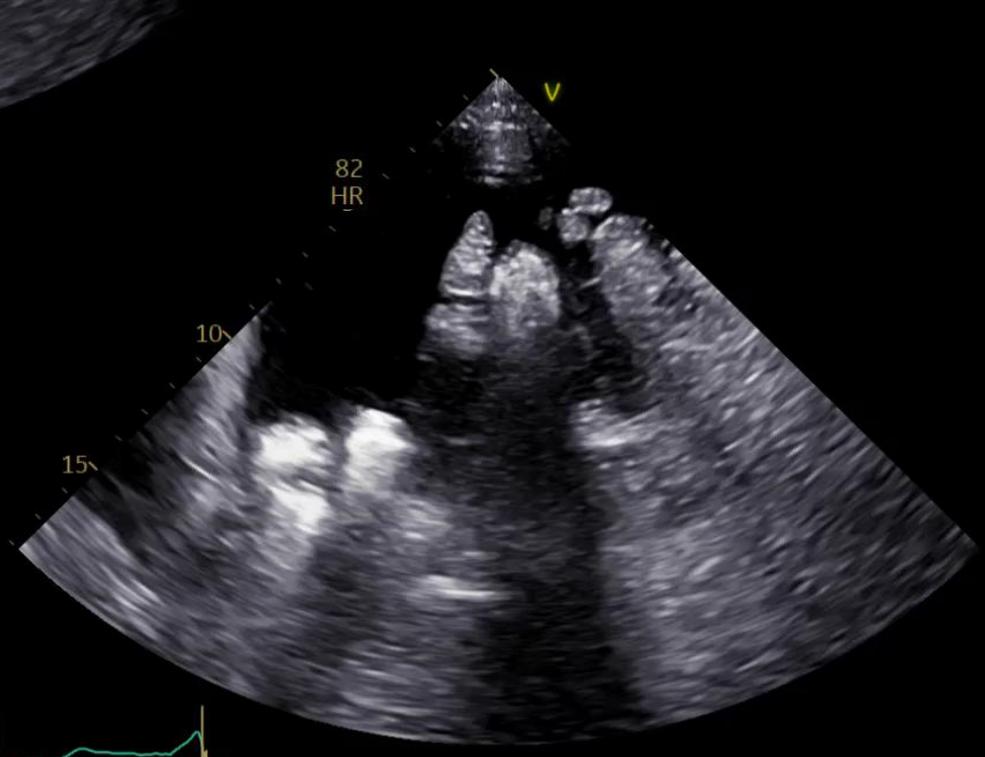
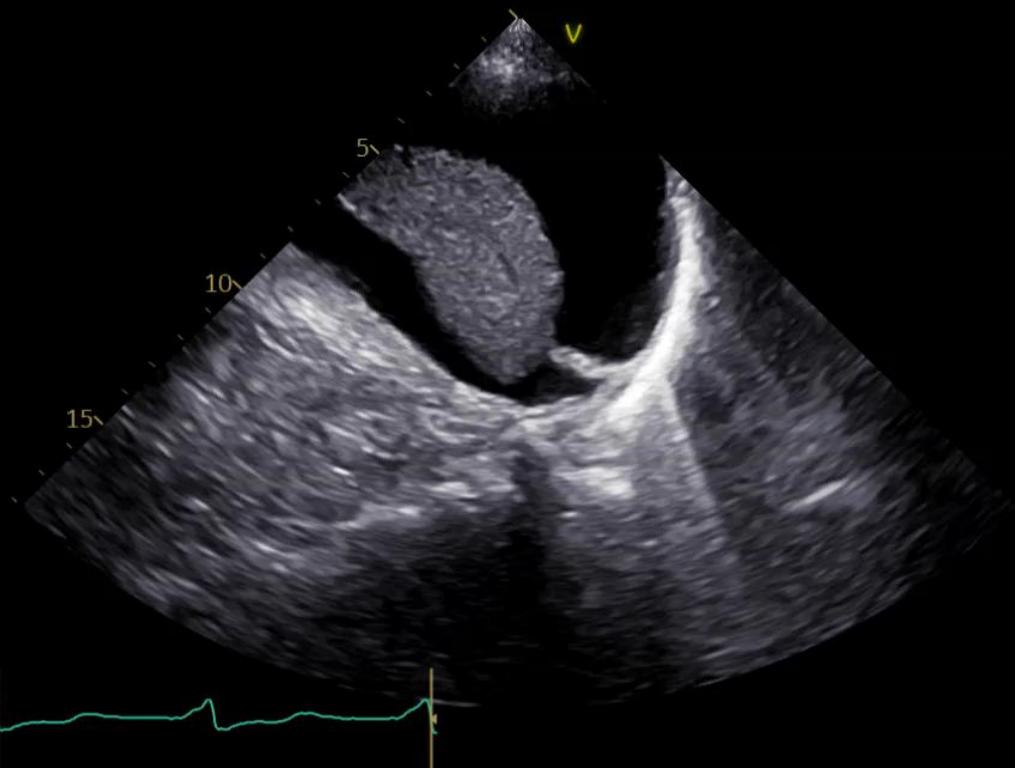


L 3.58 cm



L 3.07 cm



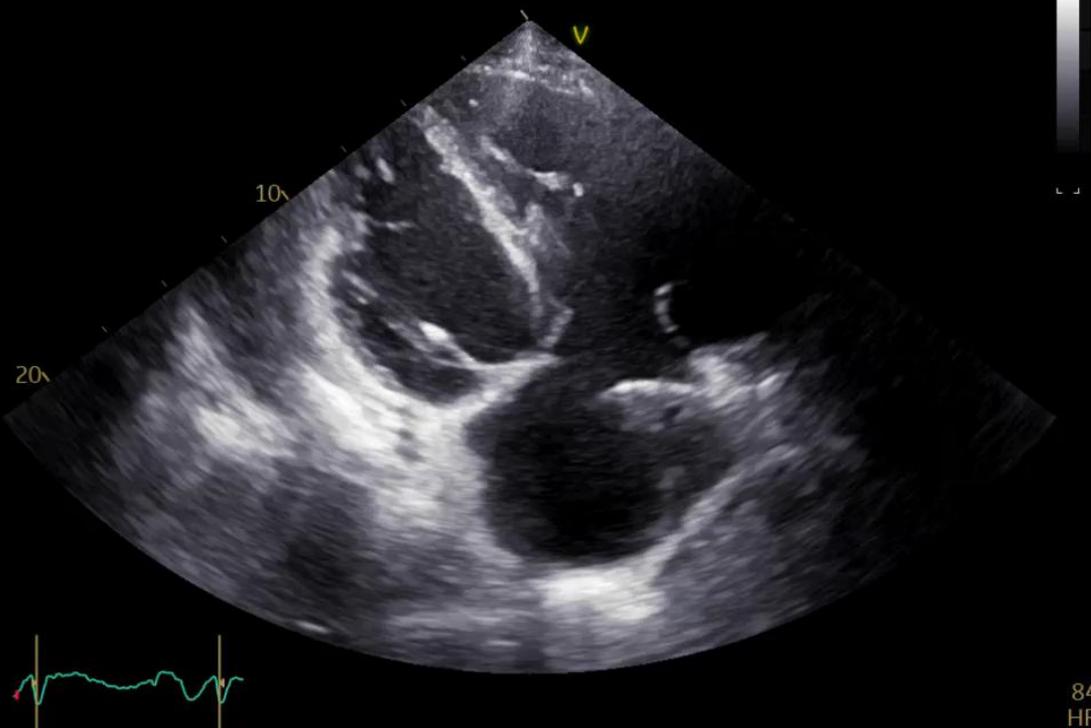


4 мес после операции

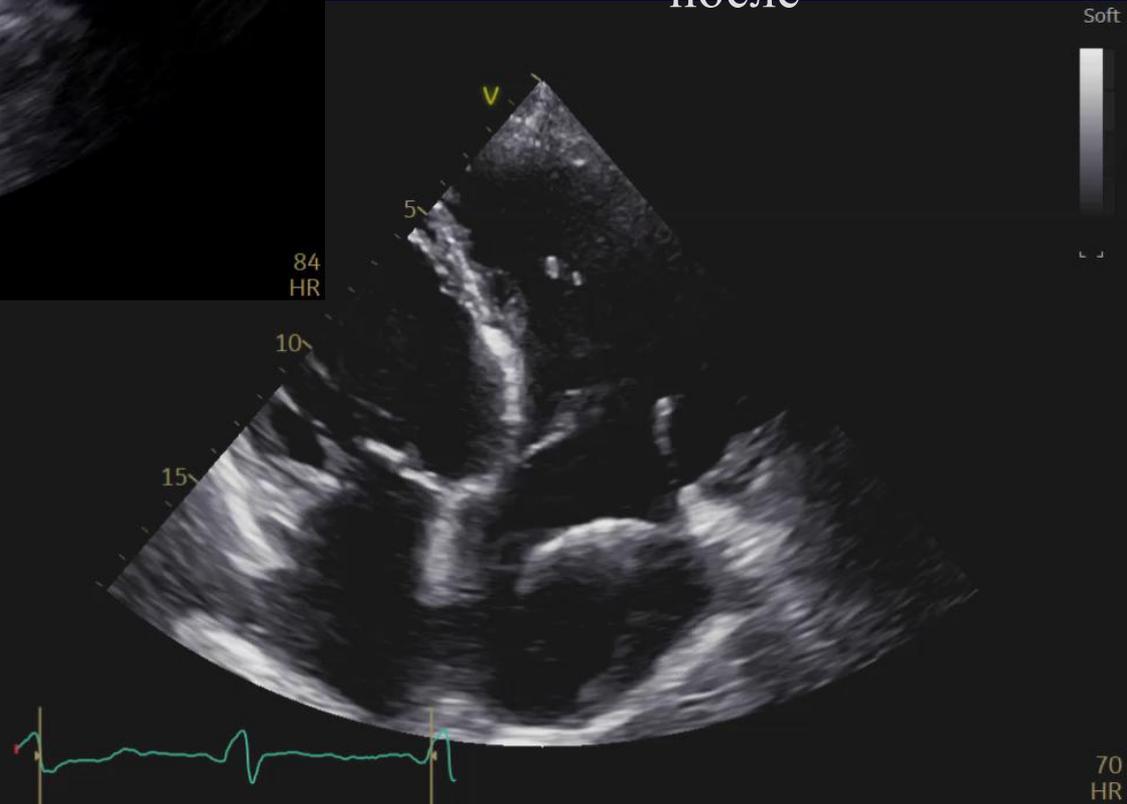
ТТЭхоКГ

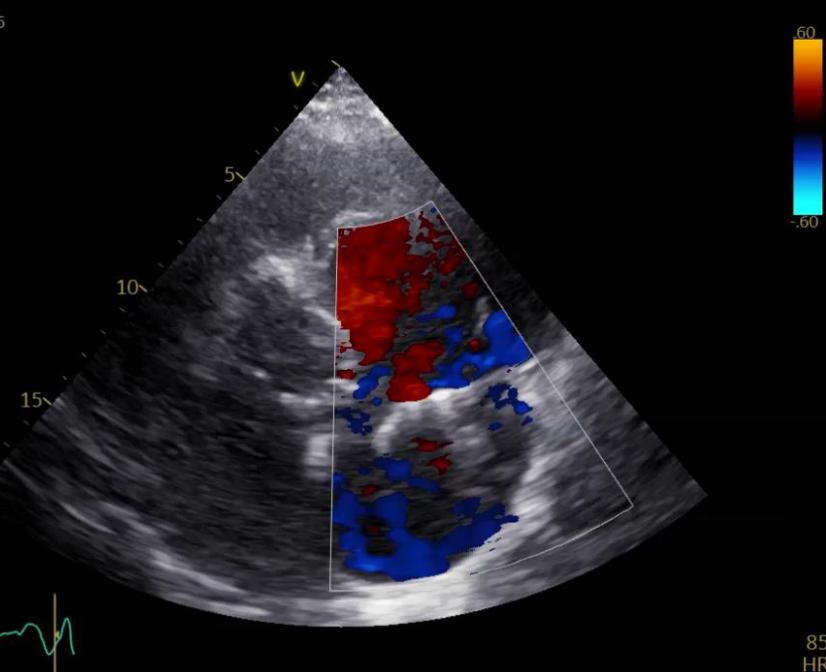
3/07/2024 17:01:21

CE

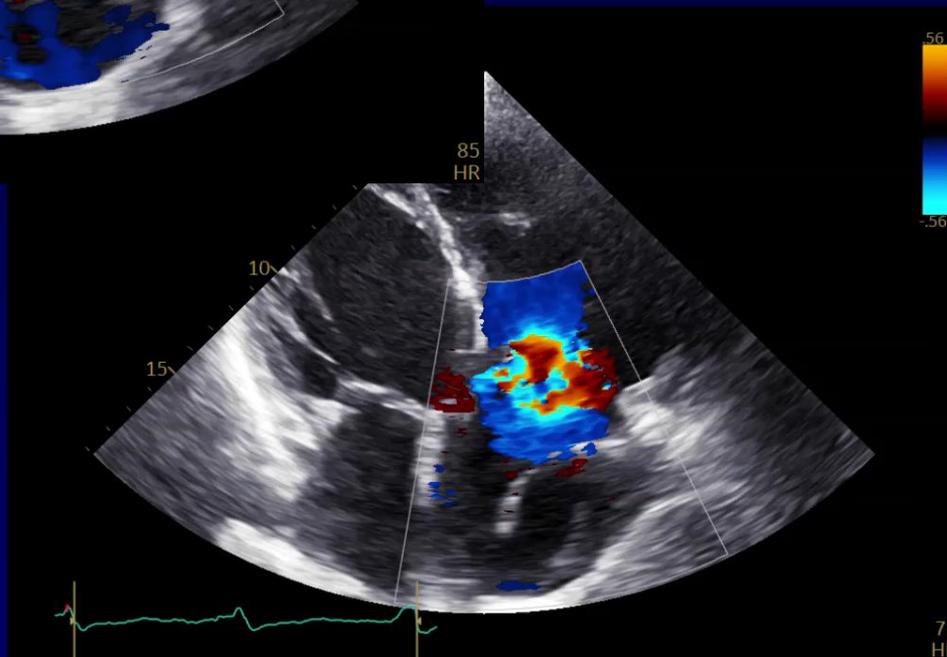


ПОСЛЕ

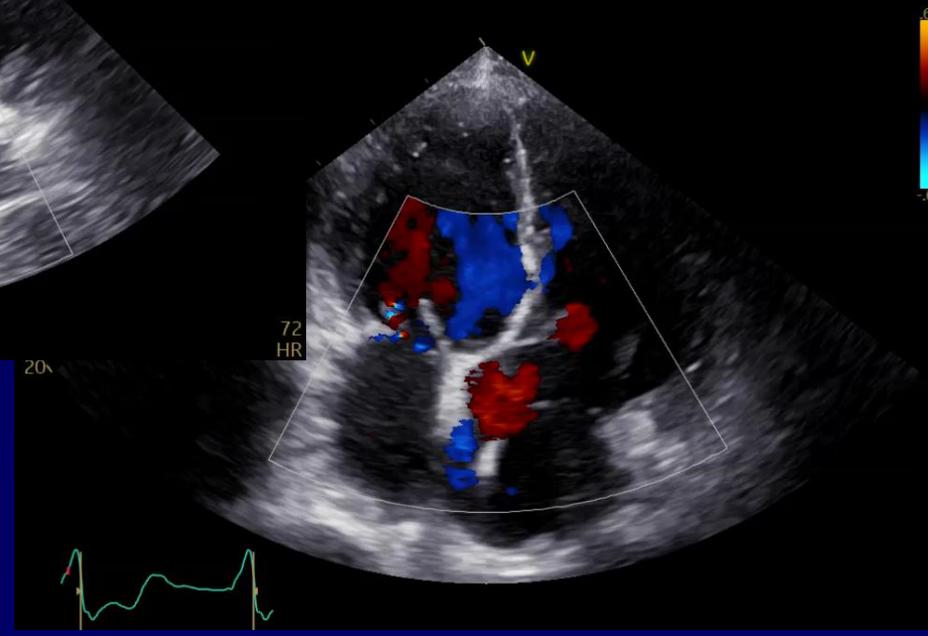




ДО

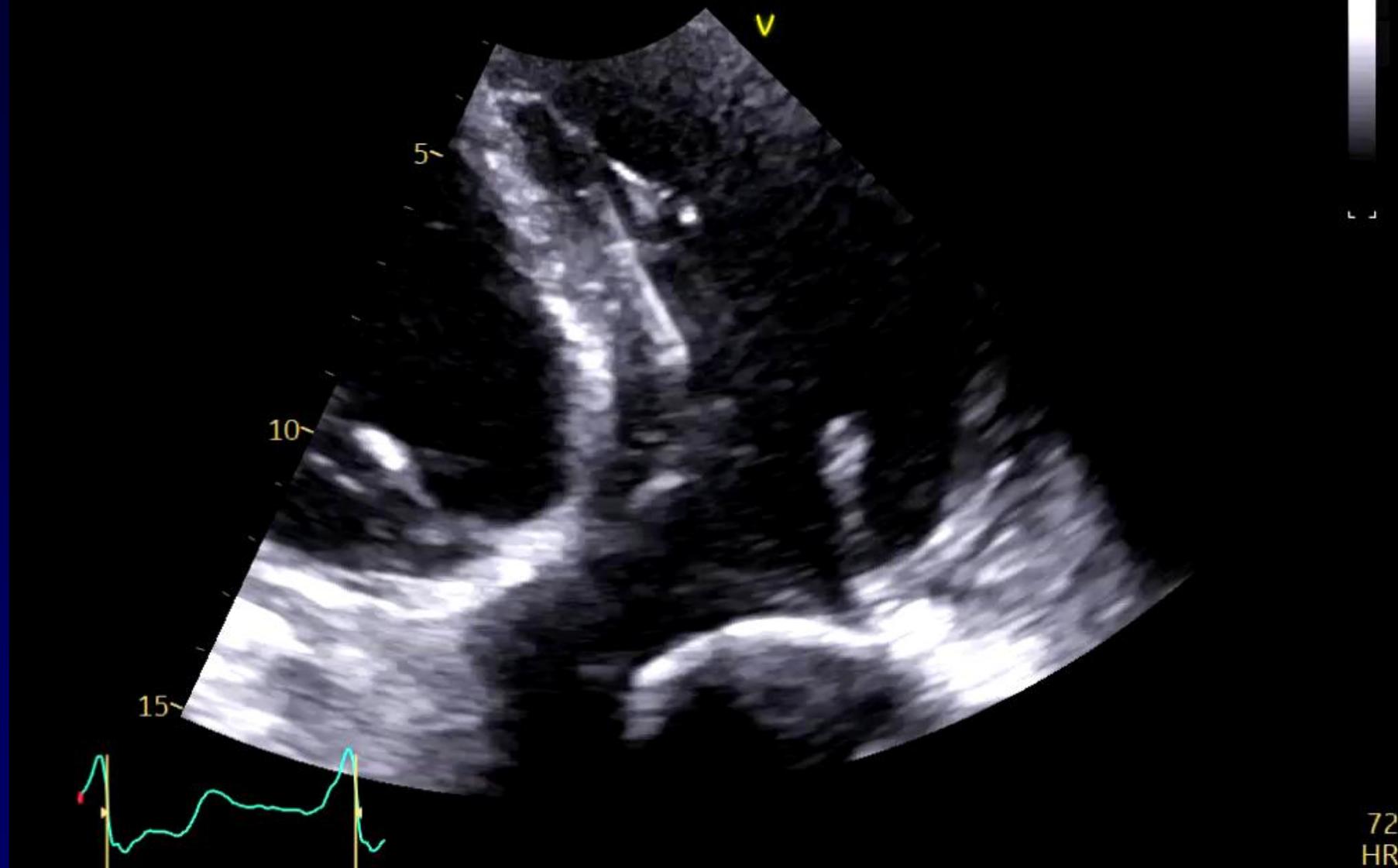


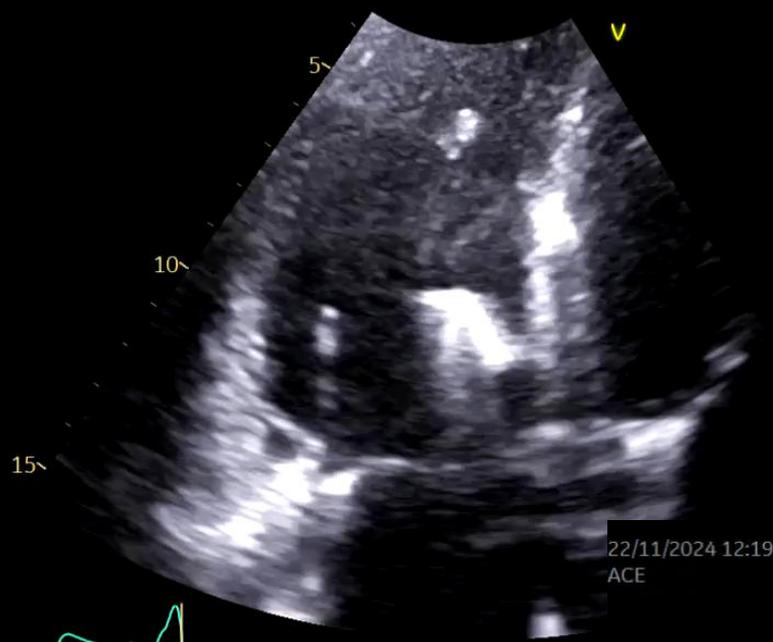
4 мес



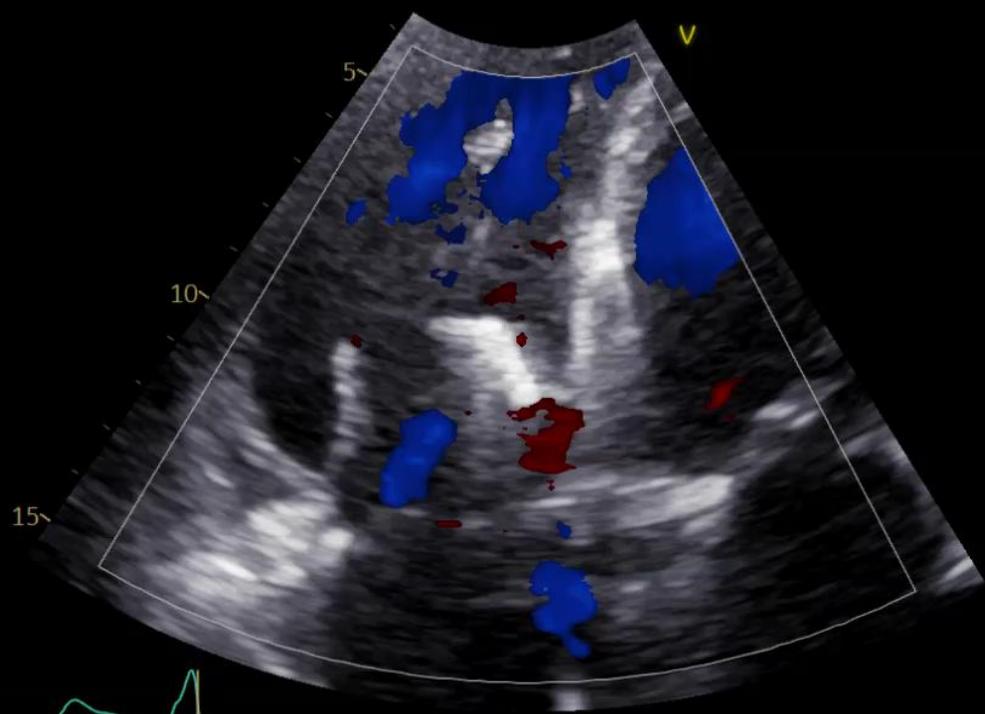
5-й день

22/11/2024 12:15:11
ACE



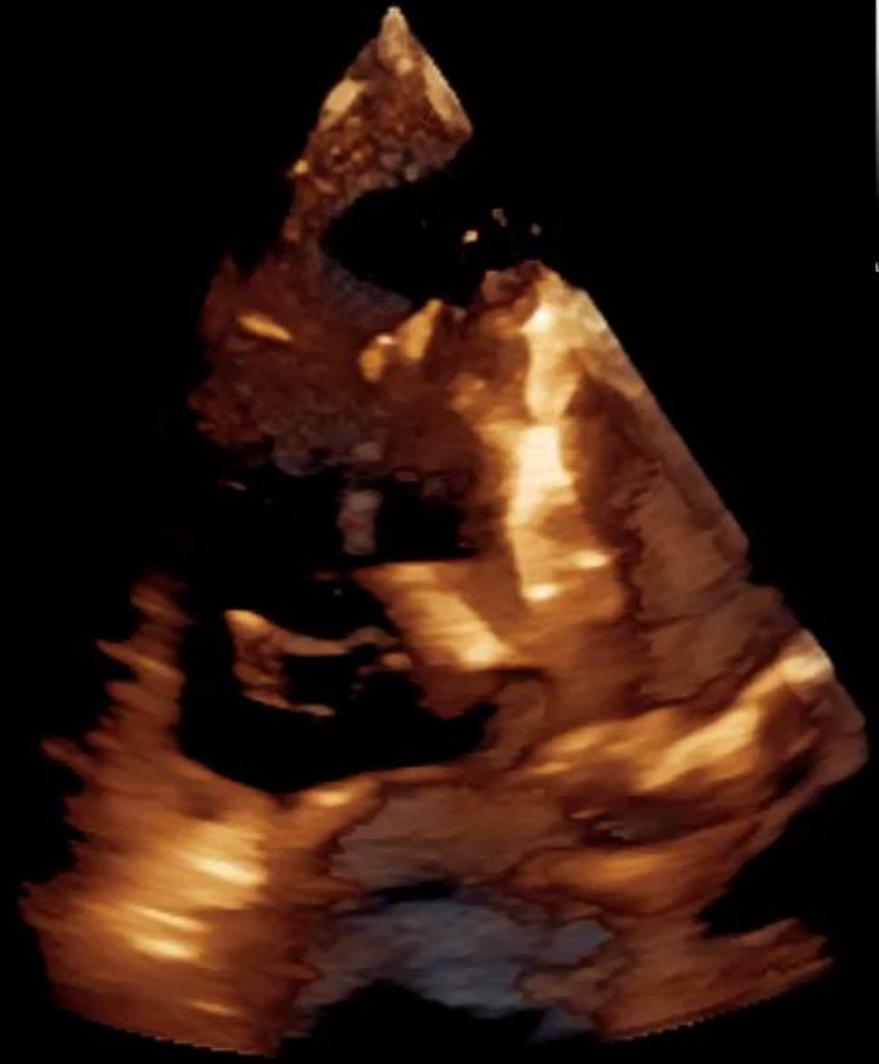
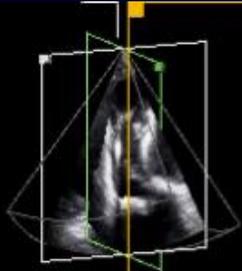


22/11/2024 12:19:26
ACE



68
-68

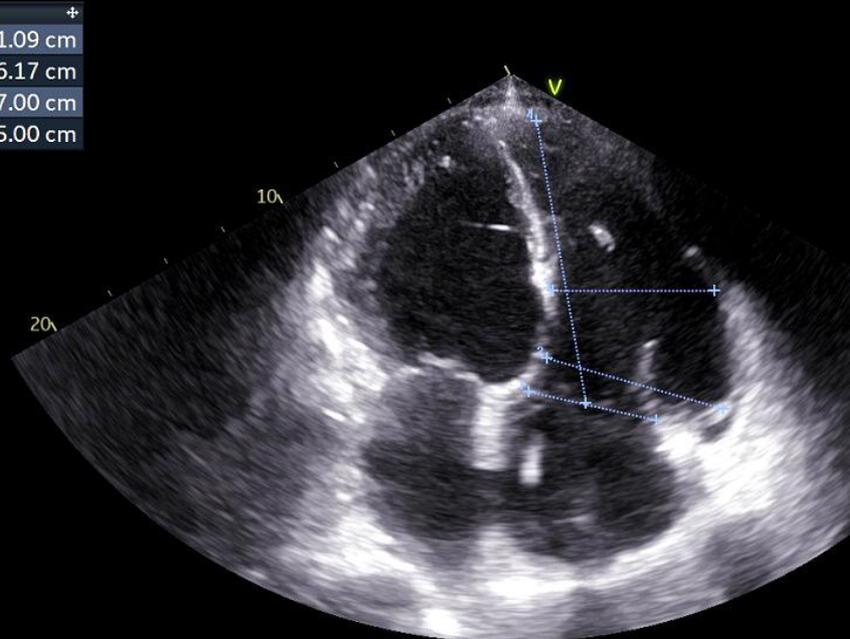
22/11/2024 12:26:38



Soft

2 cm
HR 71

ДО



4 L	8.95 cm
3 L	4.00 cm
2 L	5.00 cm
1 L	4.00 cm



кольцо ТК=5,0 см;

D1 = 7,0 см;

D2 = 6,2 см;

D3 = 11,0 см;

FAC = 22% (N>35%)

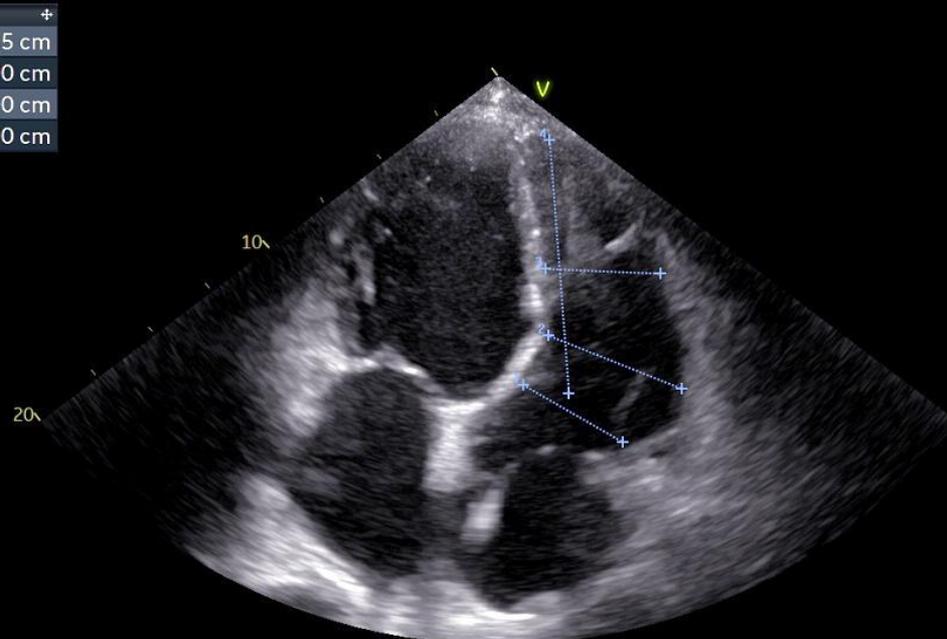
TAPSE= 1,35 см (N>1,7 см)

ПП = 54 см²; (N<18 см²)

ОПП = 290 мл;

иОПП= 140 мл/м² (N<32 мл/м²)

4 мес



кольцо ТК=4,0 см;

D1 = 5,0 см;

D2 = 4,0 см;

D3 = 8,9 см;

FAC = 32 % (N>35%)

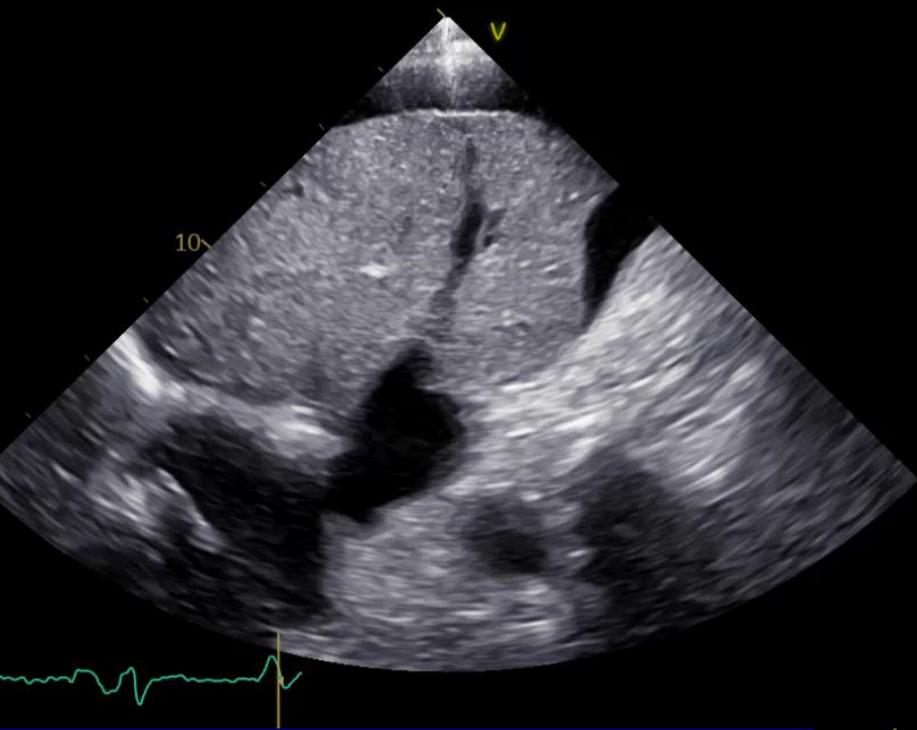
TAPSE= 1, 5 см (N>1,7 см)

ПП = 39 см²; (N<18 см²)

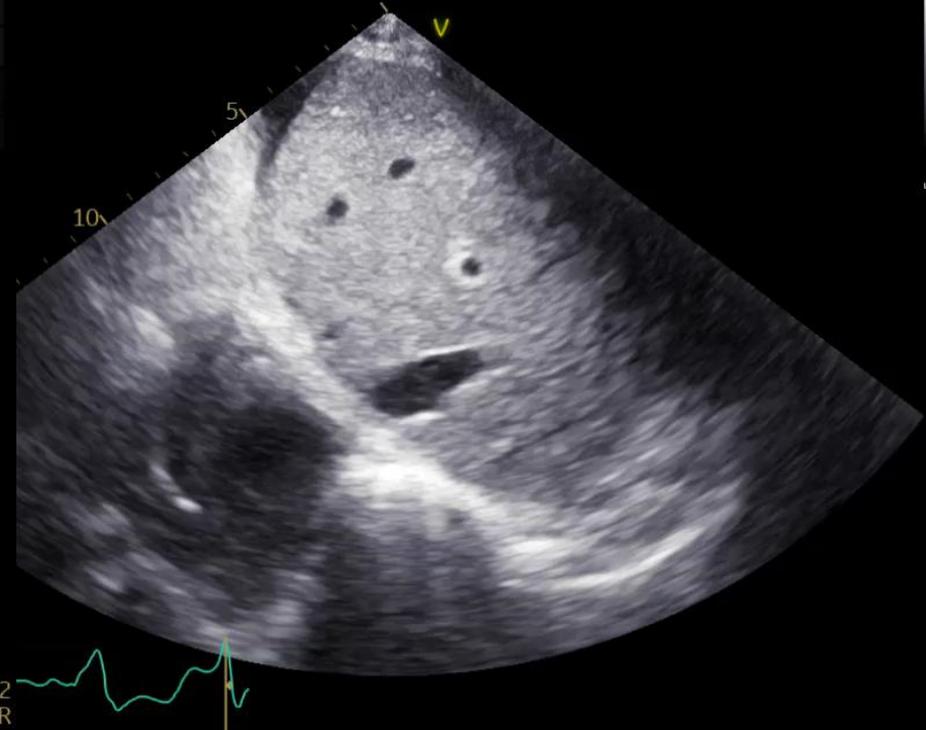
ОПП = 183 мл;

иОПП= 98 мл/м² (N<32 мл/м²)

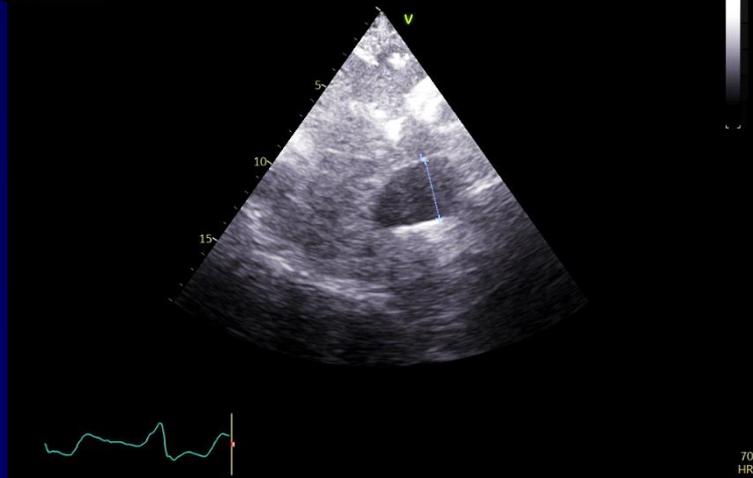
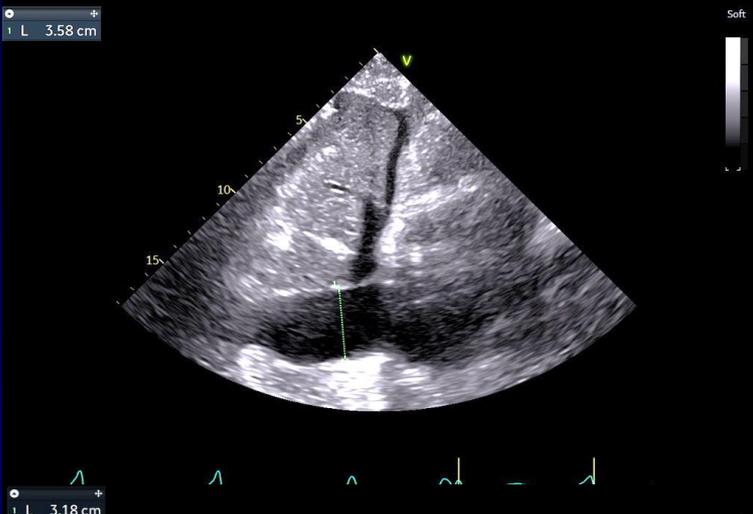
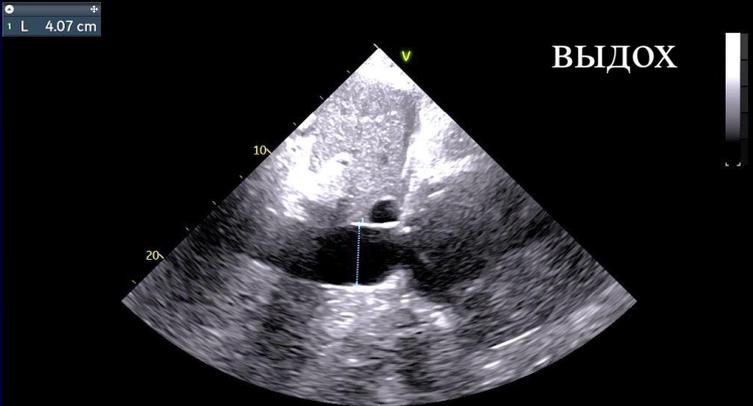
12:45



ДО



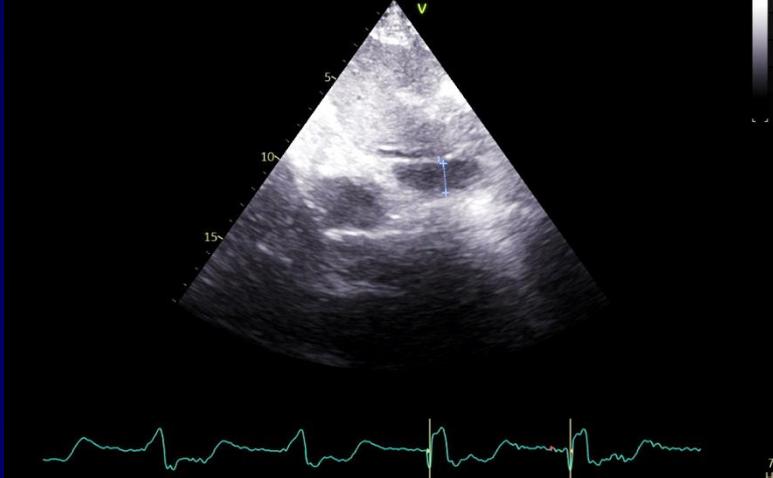
4 мес

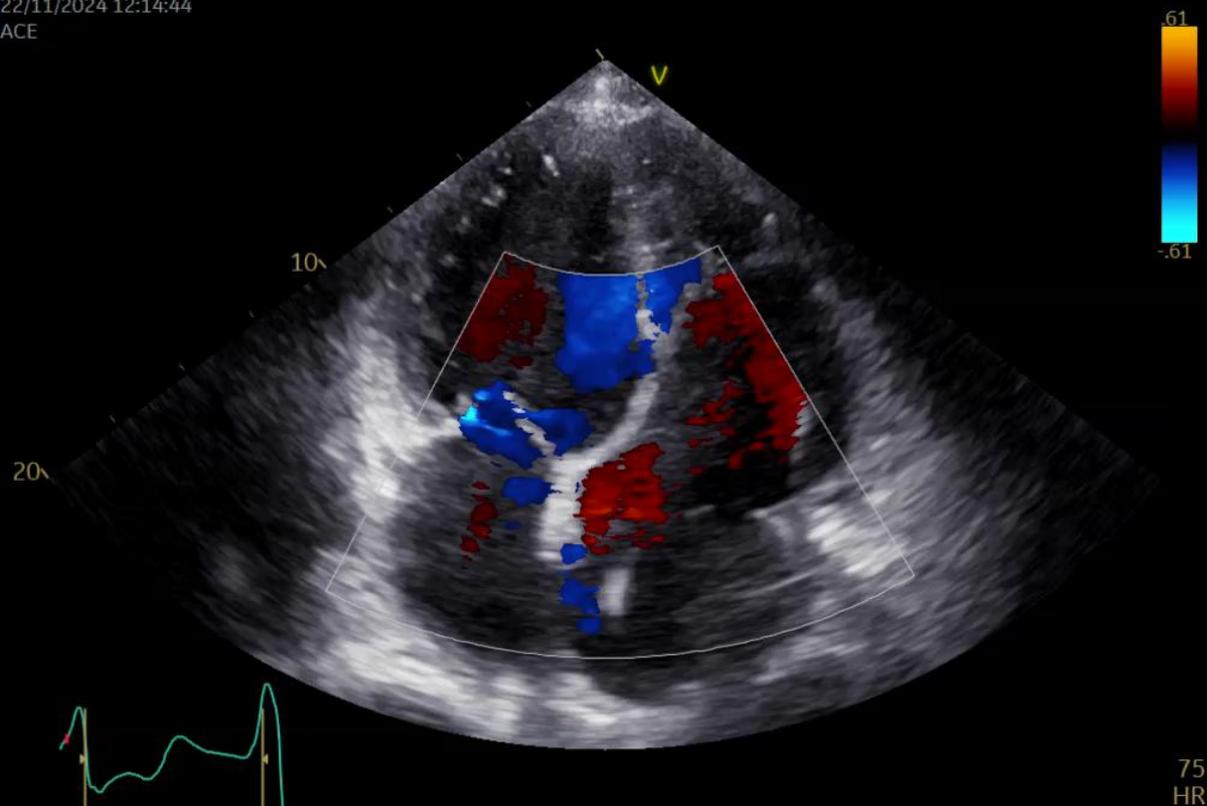


ДО
НПВ=4,1 /3,5 см

5-й день
НПВ= 3,6 /3,1 см

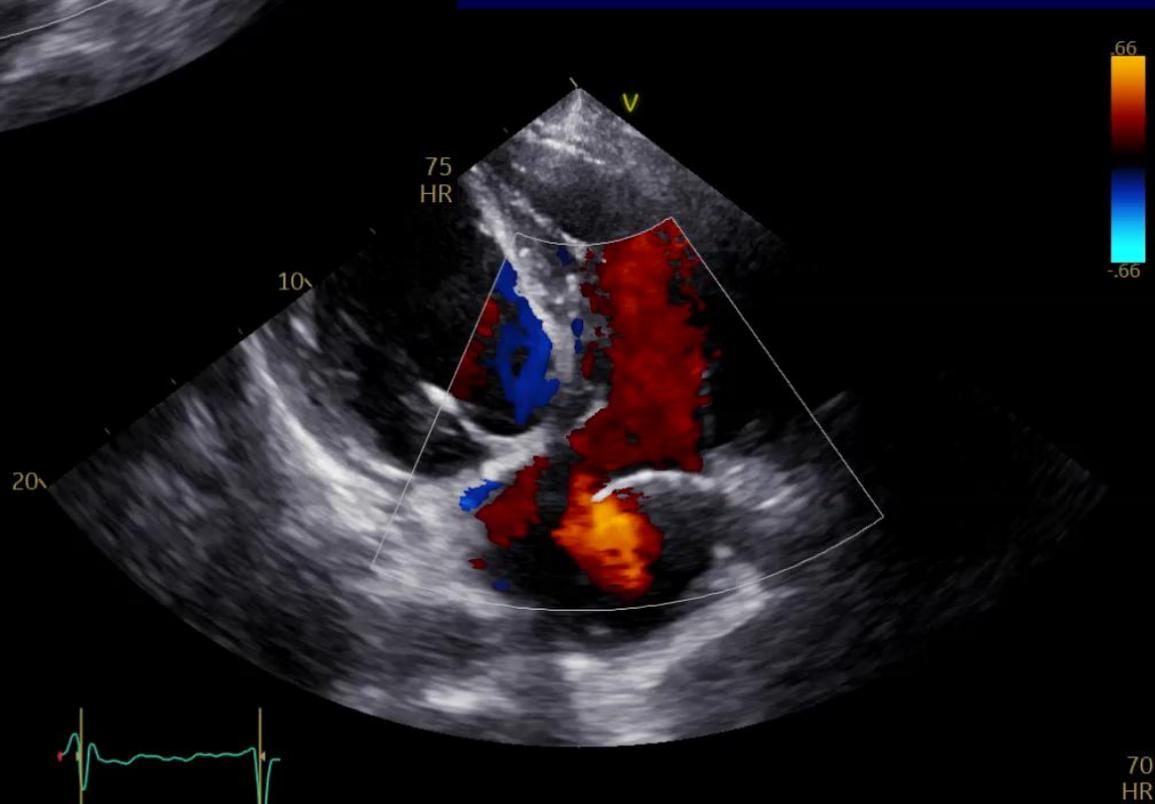
4 мес
НПВ= 3,2 /1,5 см





4 мес после операции

TP 3<-4 ст.



25/07/2024 16:18:51

ACE



71
HR

Спасибо за внимание!