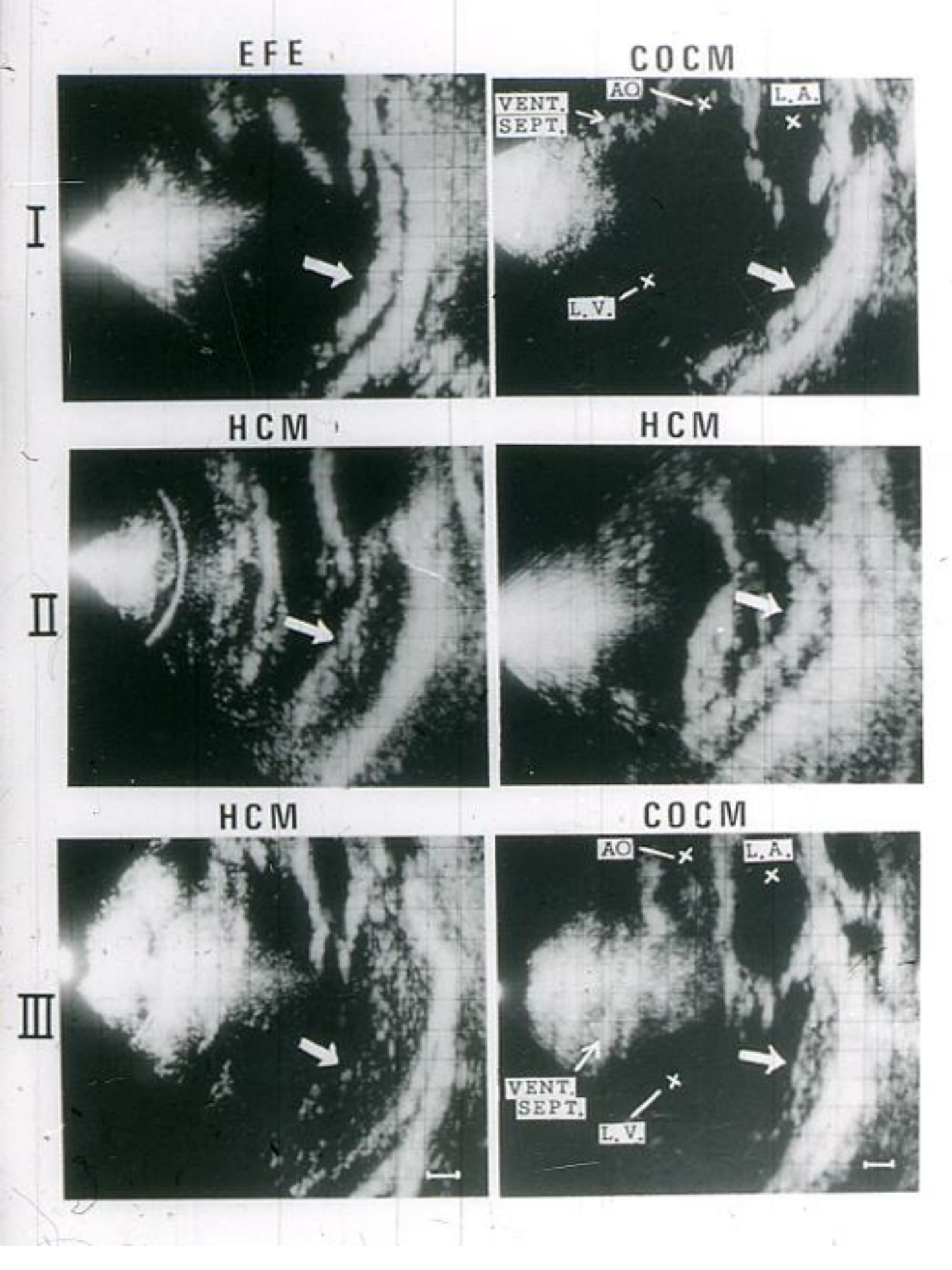
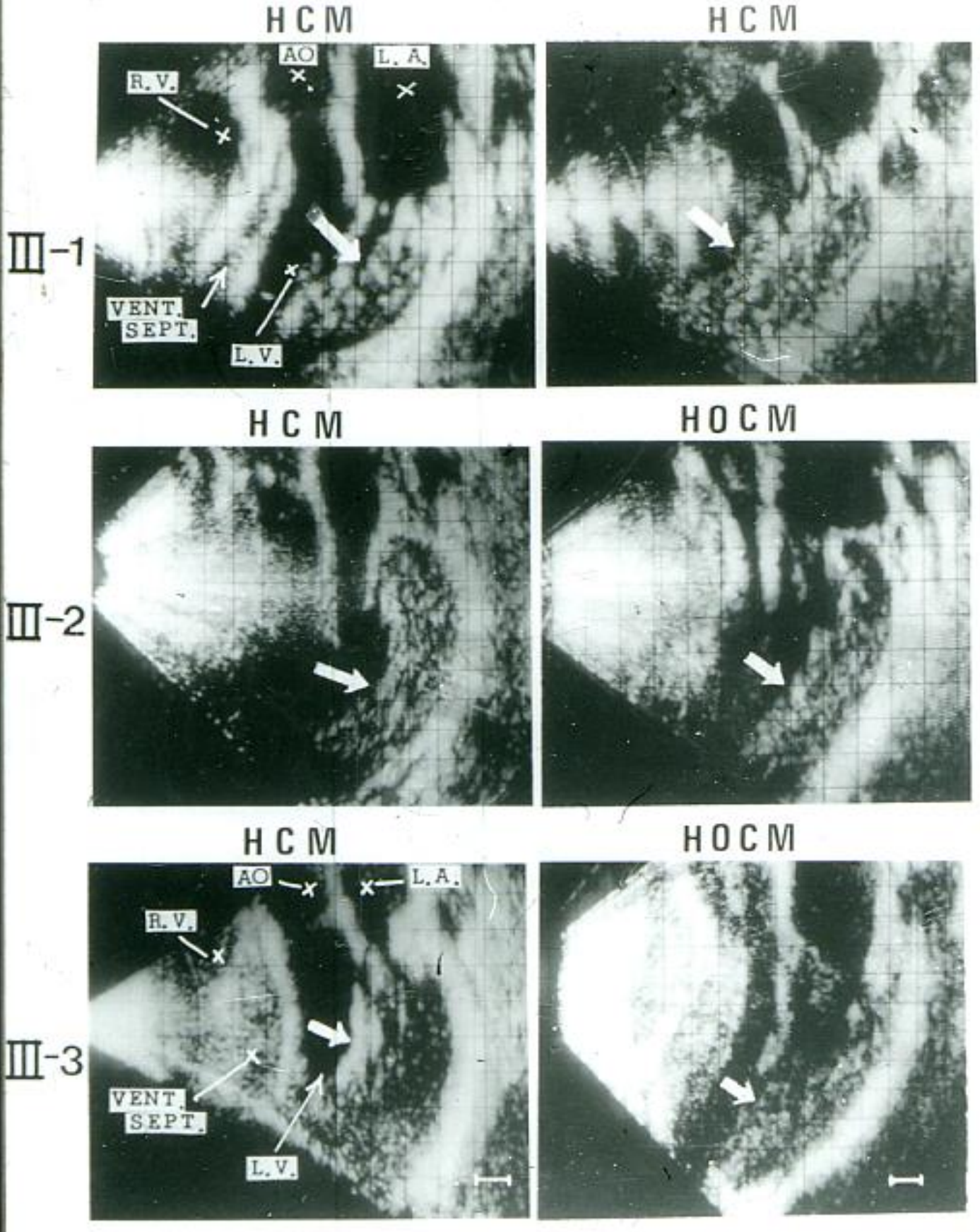
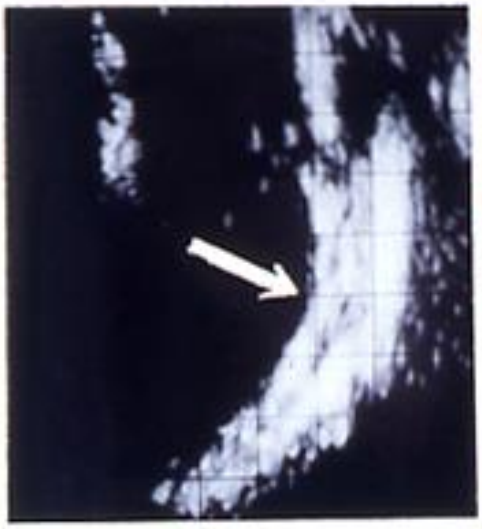
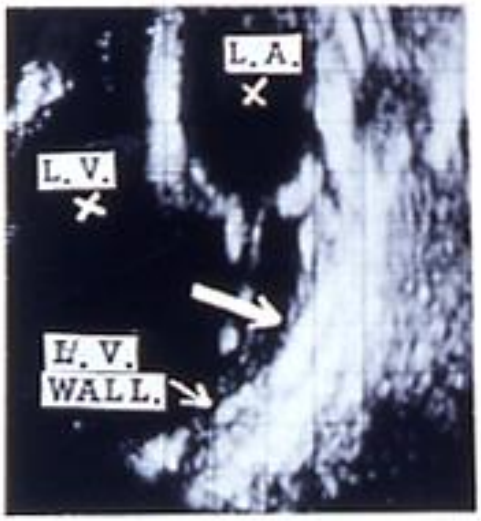
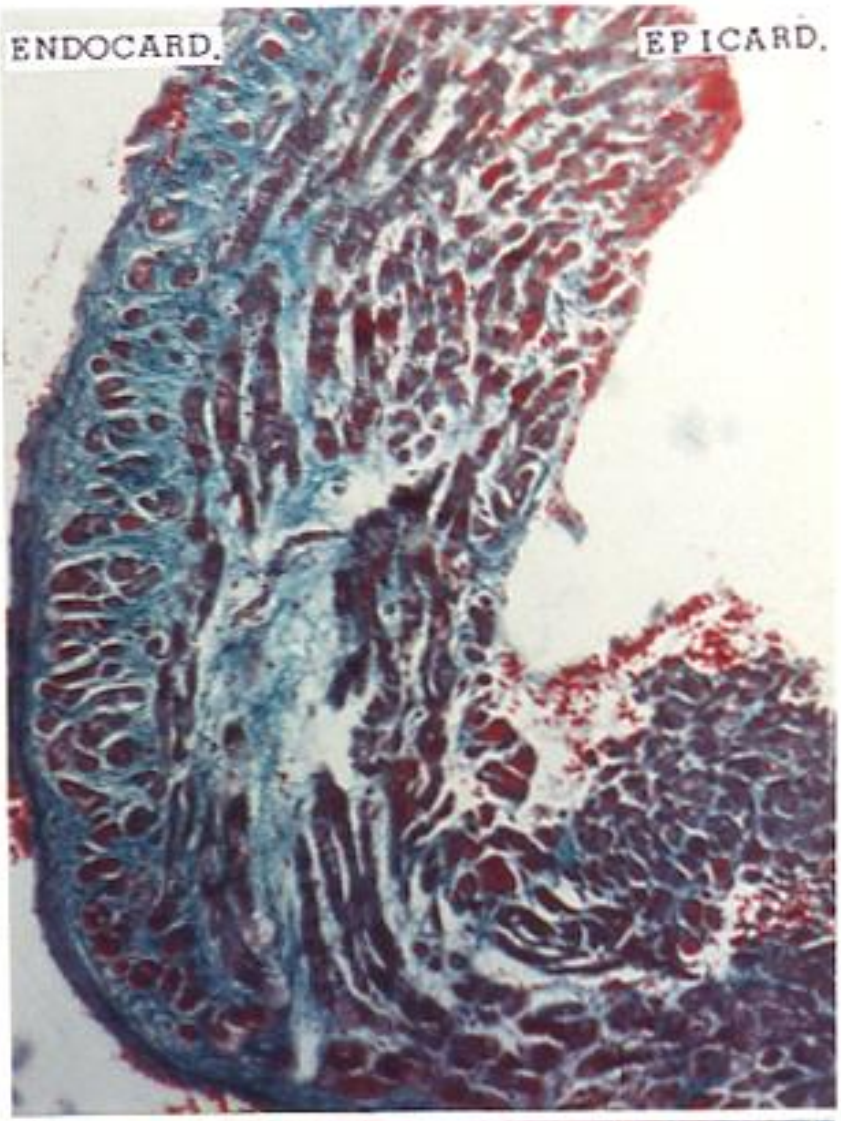

EFE
COCM
I
VENT.
SEPT.
AO
L.A.
L.V.
HCM
HCM
II
HCM
COCM
III
AO
L.A.
VENT.
SEPT.
L.V.

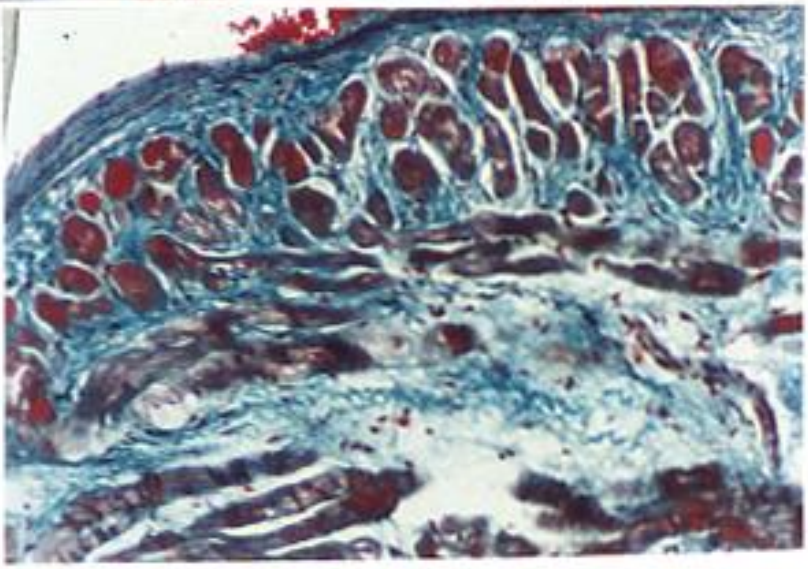

HCM
HCM
AO
L. A.
R. V.
Ⅲ-1
VENT. SEPT.
L. V.
HCM
HOCM
Ⅲ-2
HCM
HOCM
AO
L. A.
R. V.
Ⅲ-3
VENT. SEPT.
L. V.

CONGESTIVE C M



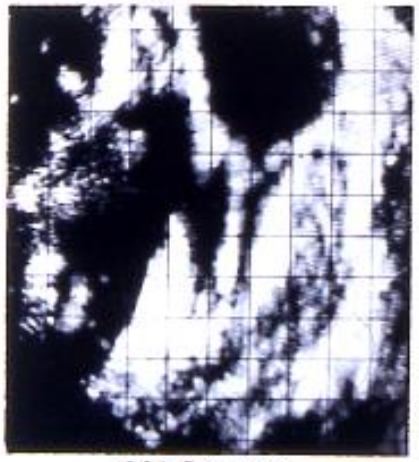




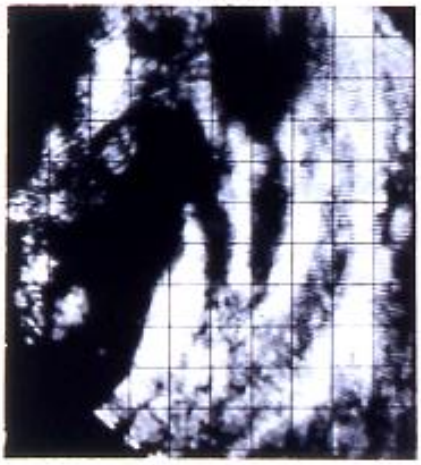


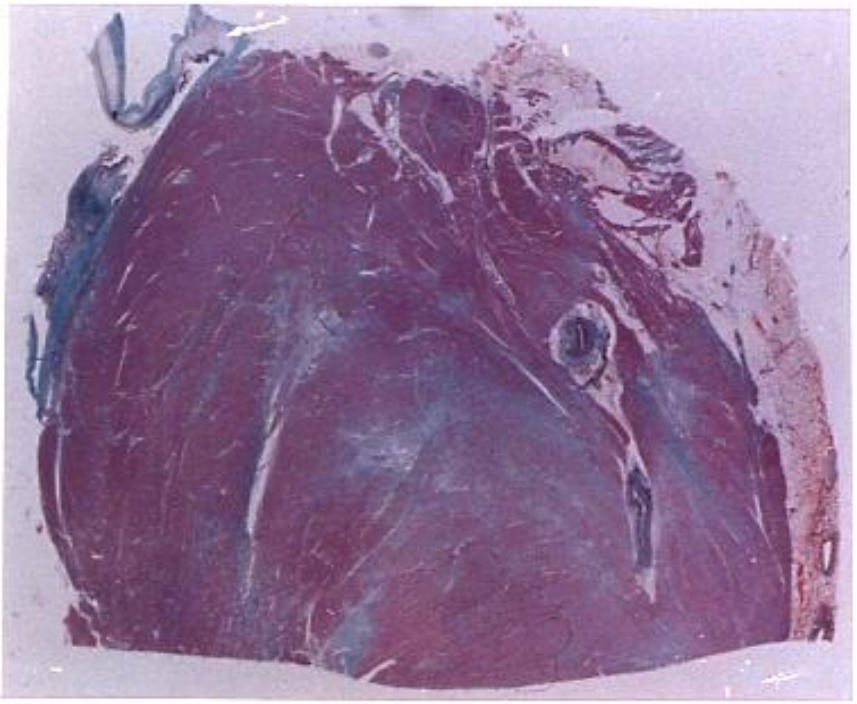
IHCM

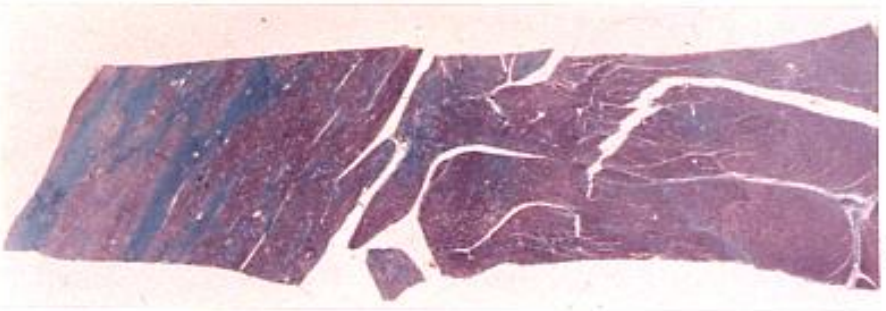
SYSTOLE



DIASTOLE

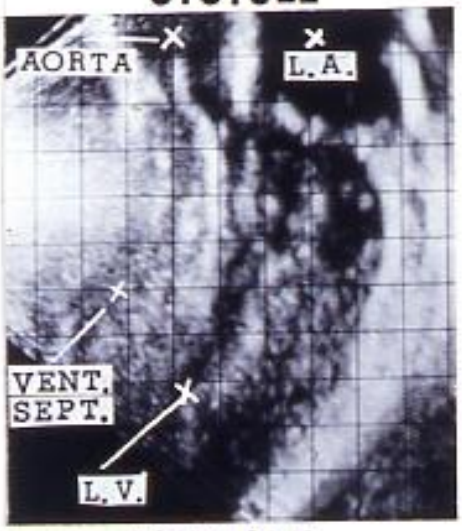






IHSS

SYSTOLE



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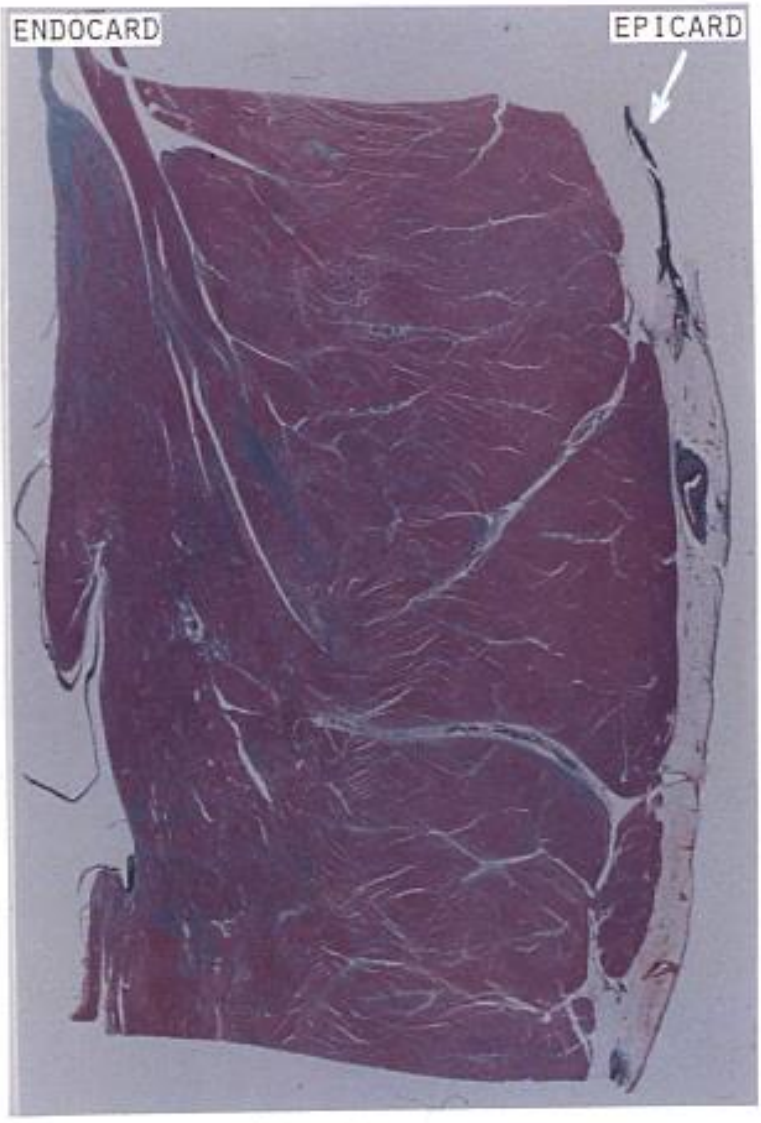
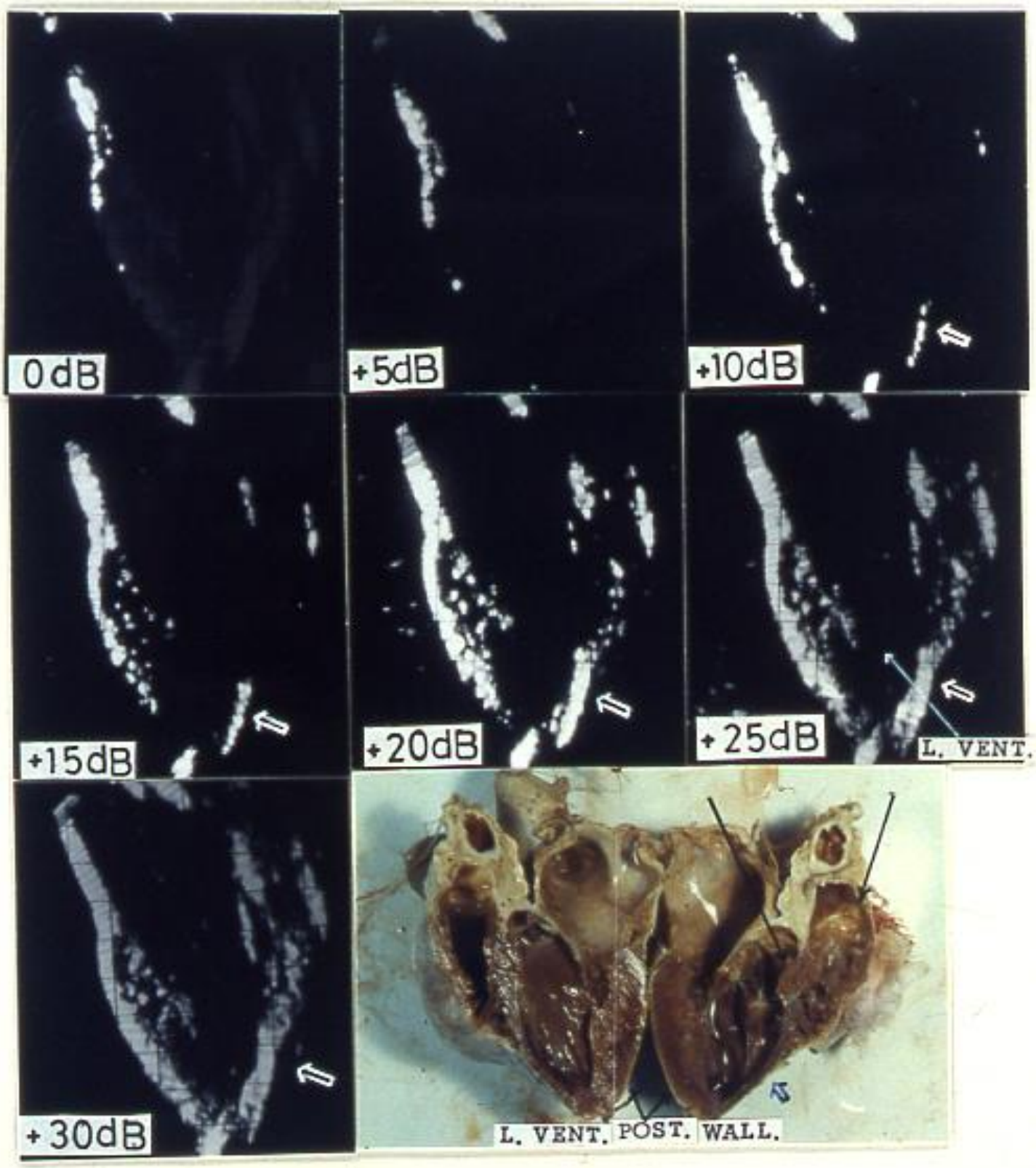
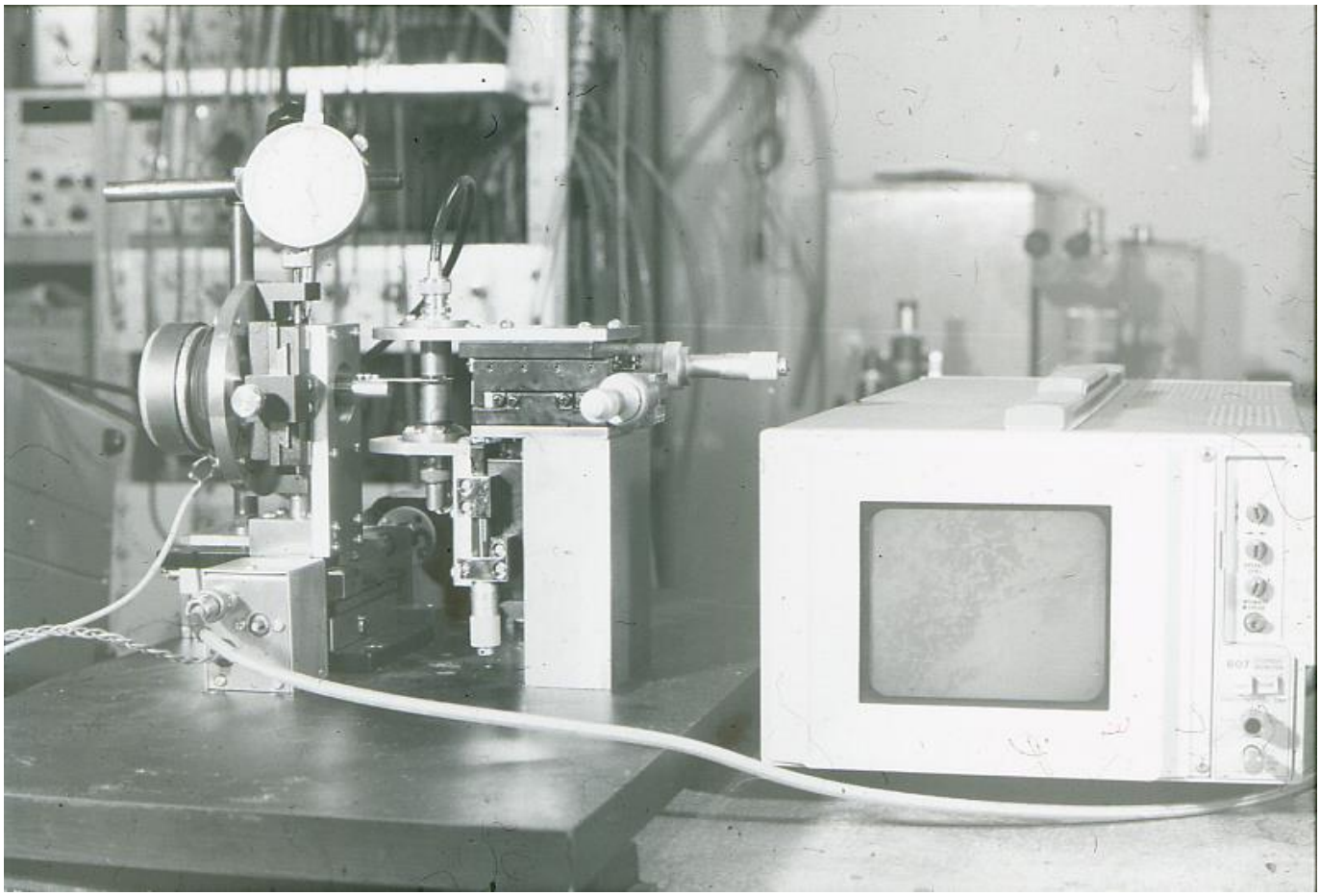
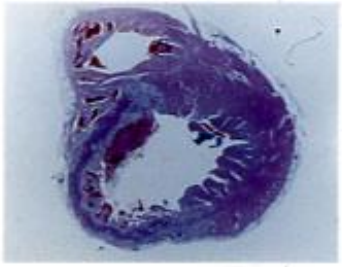



0dB
+5dB
+10dB
+15dB
+20dB
+25dB
L. VENT.
+30dB
L. VENT. POST. WALL.



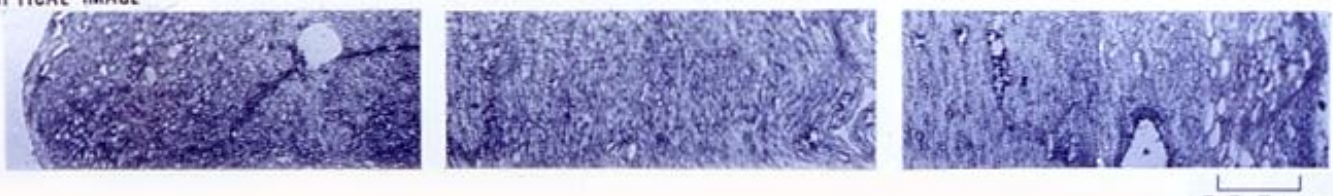
ANTERO-SEPTAL MYOCARDIAL INFARCTION (HUMAN)



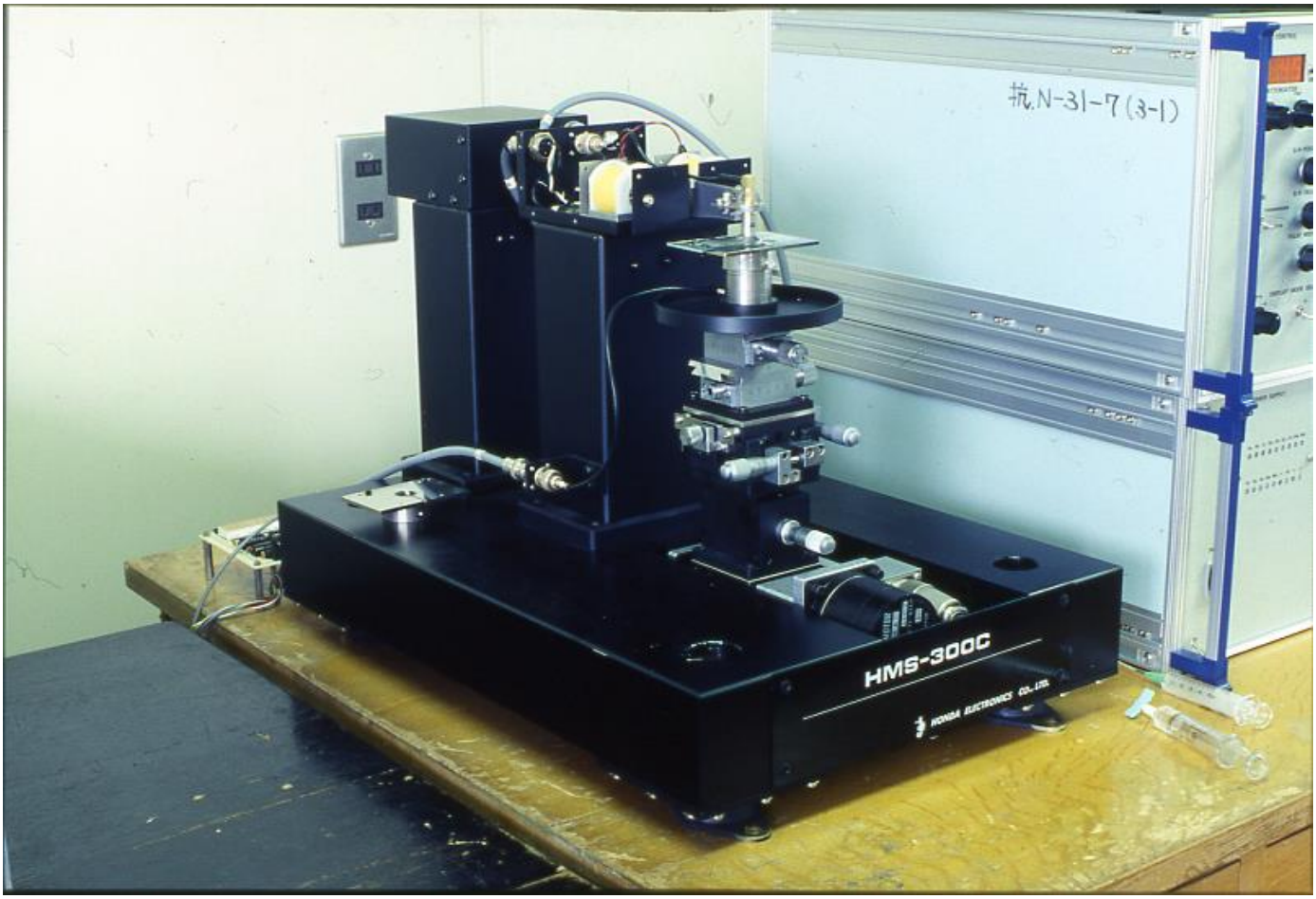
ACOUSTIC IMAGE

(a) (b) (c)

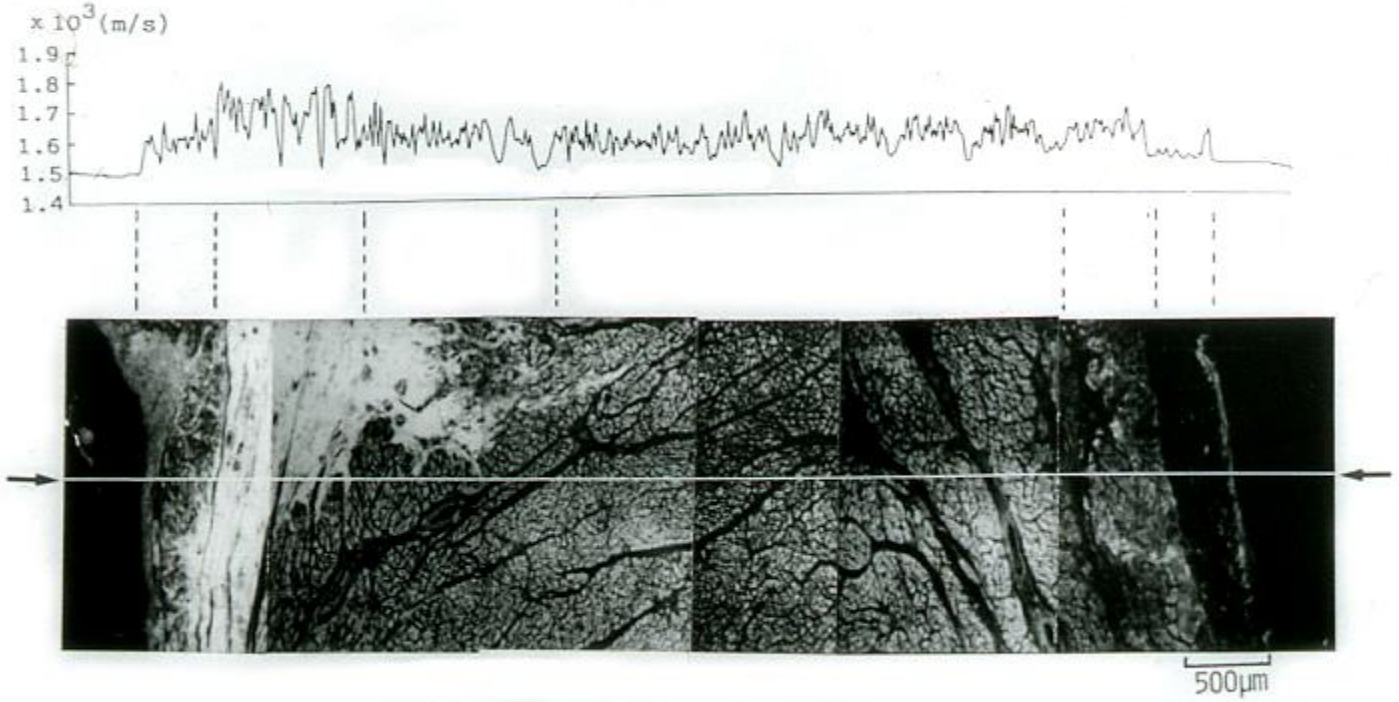
OPTICAL IMAGE



200μm


#N-31-7(3-1)
HMS-300C
HONDA ELECTRONICS CO.,LTD.

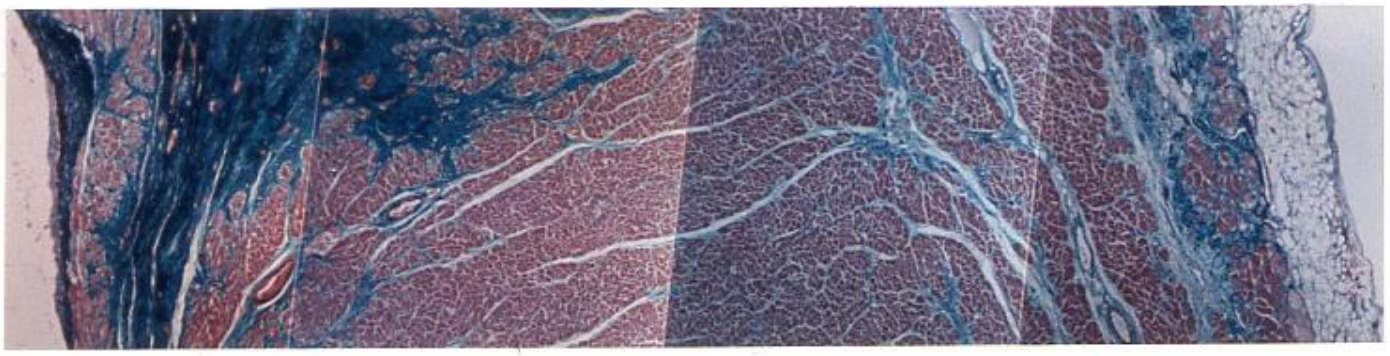
M I



PHASE IMAGE (130 MHz)

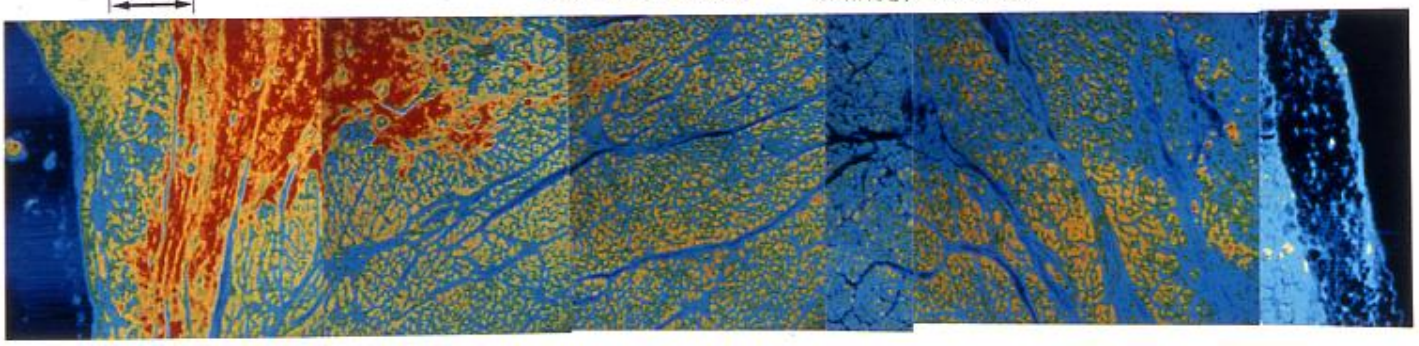
M I

OPTICAL IMAGE

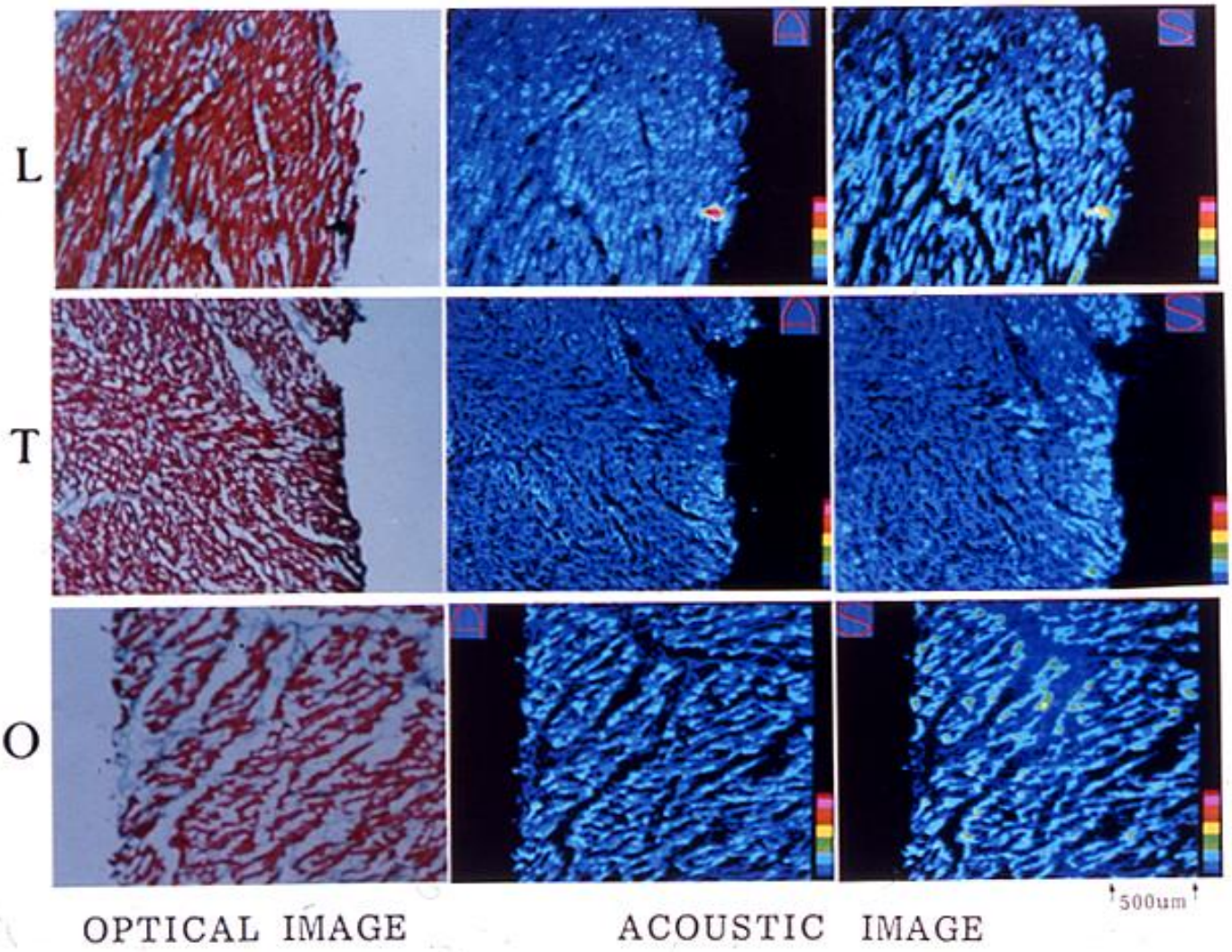


500 μm

ACOUSTIC IMAGE (PHASE) 130 MHz

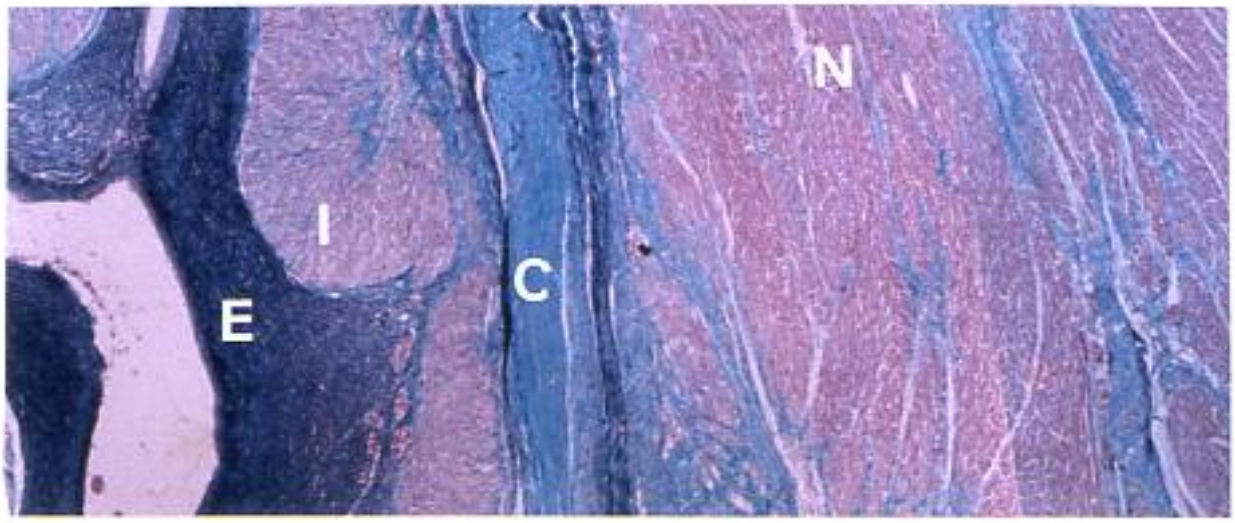


HUMAN MYOCARDIUM



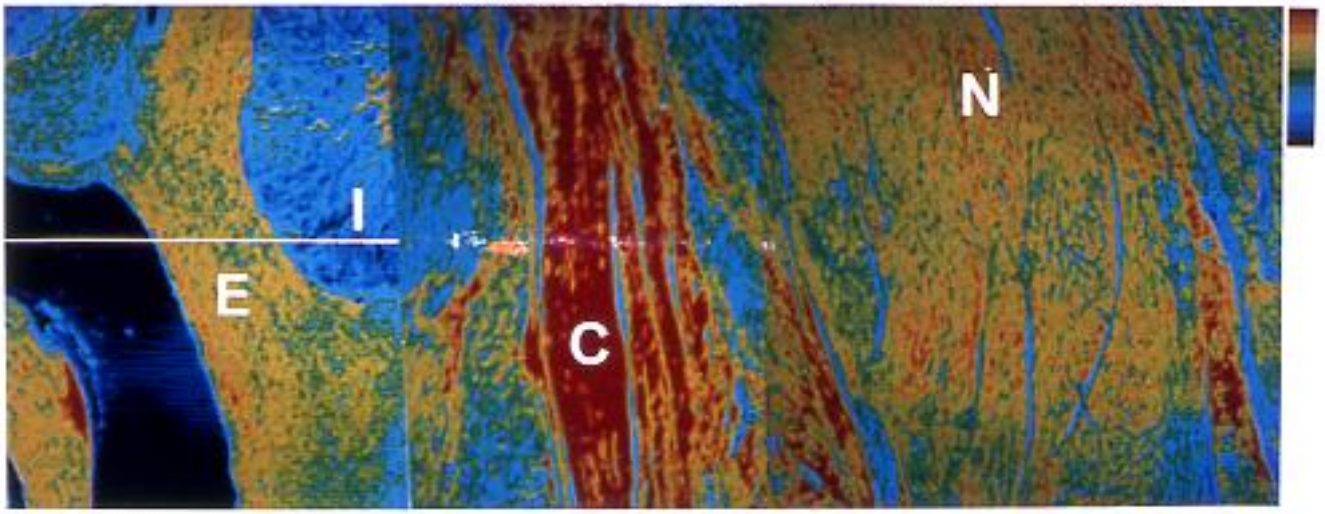
M I

OPTICAL IMAGE

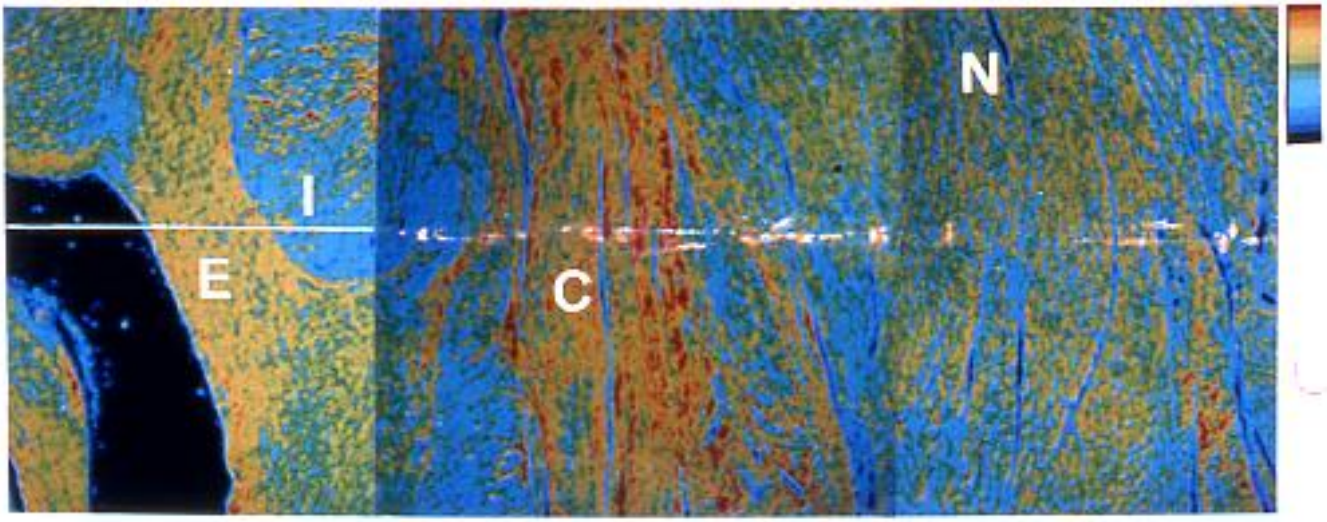


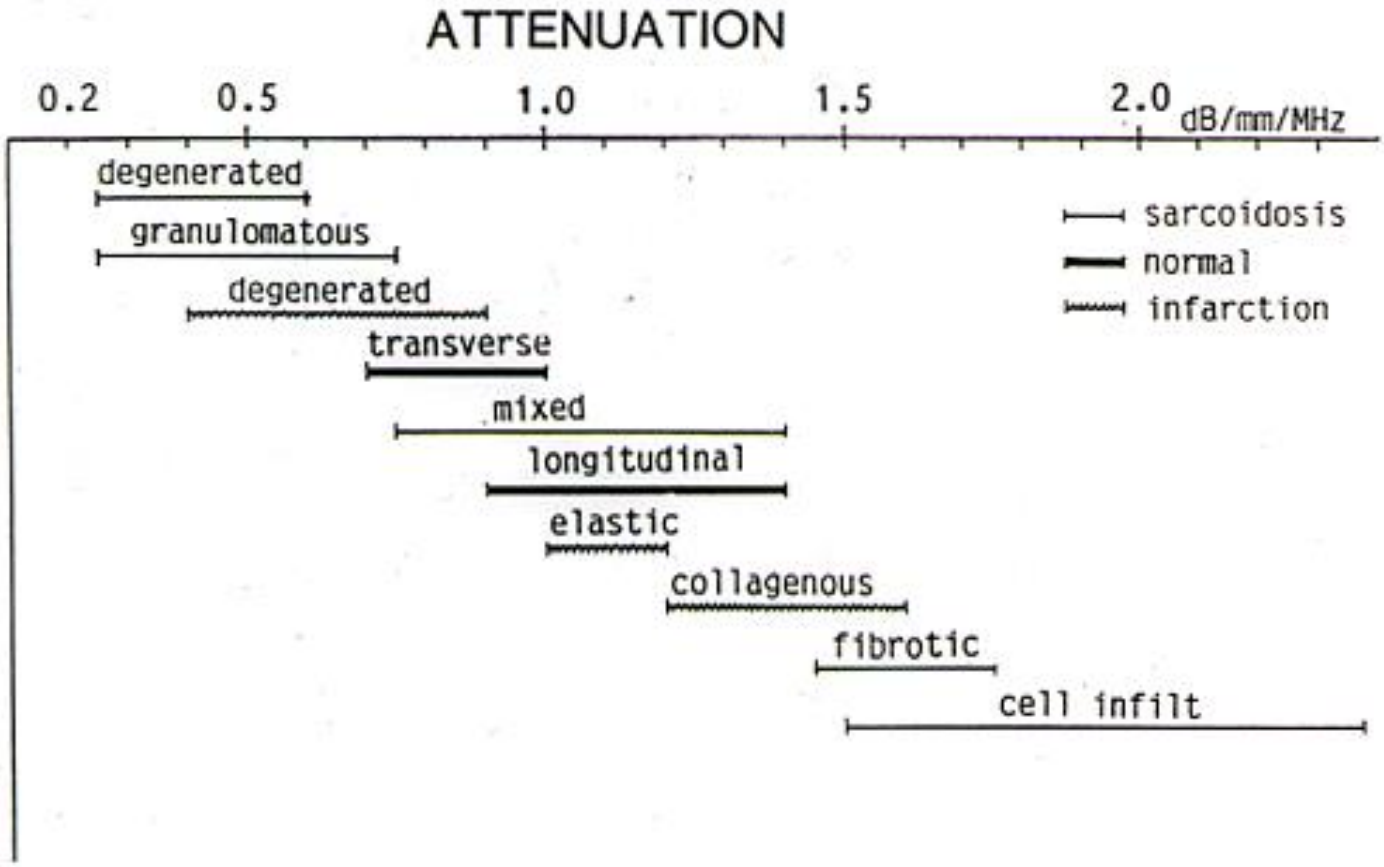
500 um

ACOUSTIC IMAGE (130 MHz) PHASE



AMPLITUDE




ATTENUATION
0.2
0.5
1.0
1.5
2.0
dB/mm/MHz
degenerated
granulomatous
degenerated
transverse
mixed
longitudinal
elastic
collagenous
fibrotic
cell infilt
sarcoidosis
normal
infarction

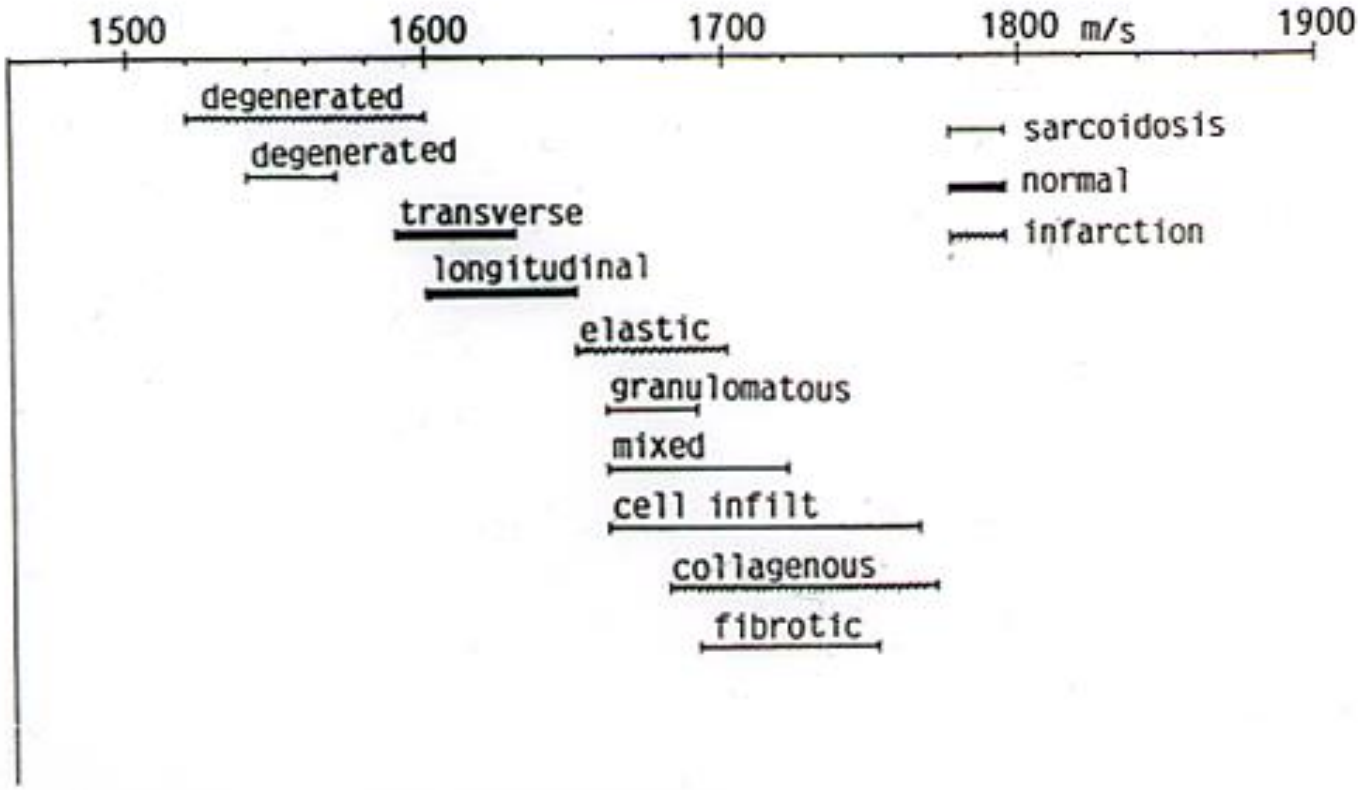
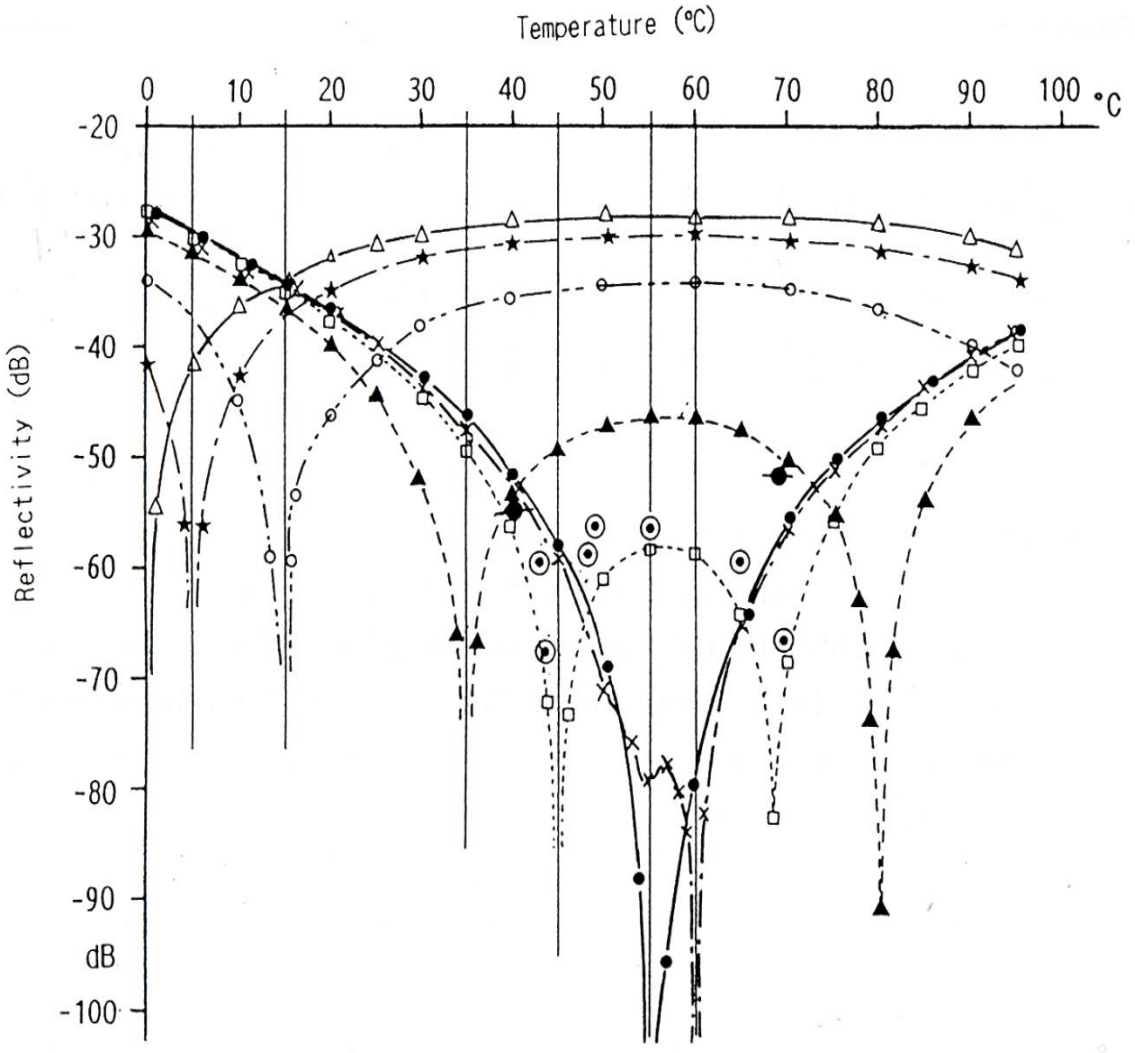
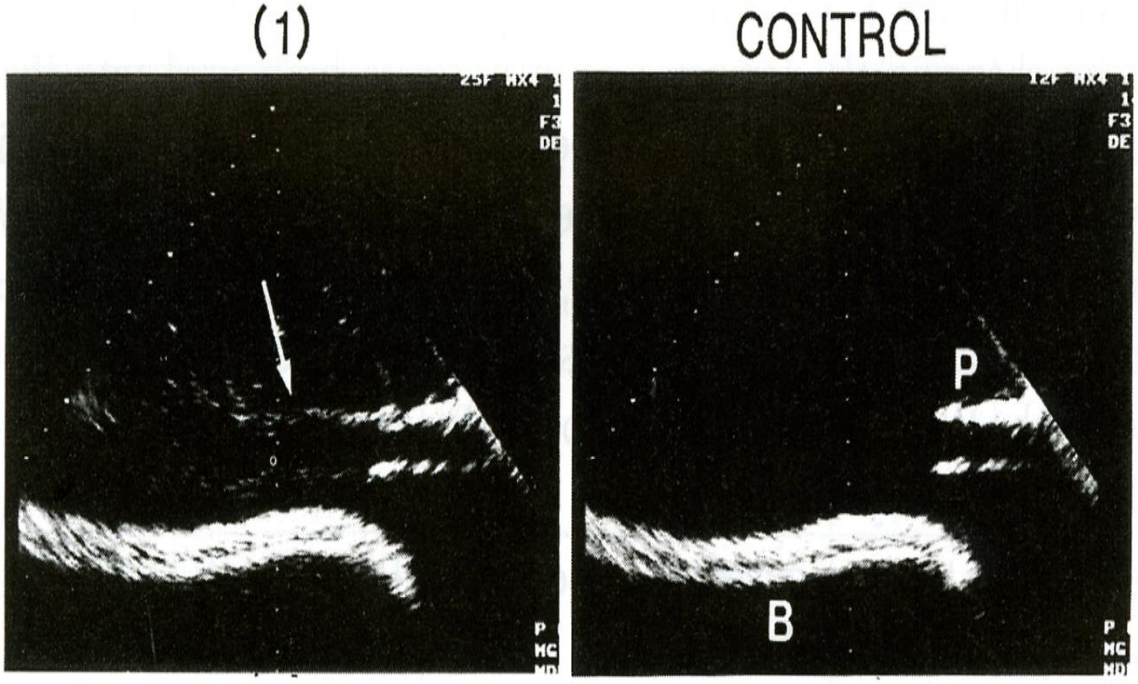

SPEED
1500
1600
1700
1800
m/s
1900
degenerated
degenerated
transverse
longitudinal
elastic
granulomatous
mixed
cell infilt
collagenous
fibrotic
sarcoidosis
normal
infarction

Table 2

		Z_1 Z_2	γ	R_1 (dB)		Rp (dB)	Type	R_1 mean (dB)	Rp mean (dB)
N	M-B	1.751-1.672	0.023	-32.8	0	0			
D C M	D-Deg	1.914-1.675	0.06659	-23.5	9.3	18.6	I	32.3	19.6
	D-B	1.914-1.672	0.06094	-24.4	8.4	16.8			
	D-M	1.914-1.751	0.04444	-27.0	5.8	11.6	II	30.1	9.2
	L-B	1.822-1.672	0.04293	-27.3	5.5	11.0			
	L-Deg	1.822-1.675	0.04204	-27.5	5.3	10.6	III	28.2	7.3
	D-E	1.914-1.778	0.03684	-28.7	4.1	8.2			
	E-B	1.778-1.672	0.03072	-30.2	2.6	5.2	IV		
	E-Deg	1.778-1.675	0.02983	-30.5	2.3	4.6			
	L-E	1.822-1.778	0.02842	-30.9	1.9	3.8			
	D-L	1.914-1.822	0.02463	-32.2	0.6	1.2			
	Deg-M	1.675-1.751	0.0222	-33.1	-0.3	-0.6	V		
	L-M	1.822-1.751	0.0200	-34.0	-1.2	-2.4			
	E-M	1.778-1.751	0.00765	-42.2	-9.4	-18.8			
	Deg-B	1.675-1.672	0.000896	-61.0	-28.2	-56.4			
H C M	D-Deg	1.822-1.670	0.06138	-24.2	8.6	17.2	I	34.3	21.4
	D-B	1.822-1.672	0.06094	-24.4	8.4	16.8			
	L-Deg	1.791-1.670	0.04621	-26.7	6.1	12.2	II	30.5	11.6
	L-B	1.791-1.672	0.04293	-27.4	5.4	10.8			
	Deg-M	1.670-1.751	0.024	-32.4	0.4	0.8	IV	27.0	7.5
	D-M	1.822-1.751	0.020	-34.0	-1.2	-2.4	V		
	D-L	1.822-1.791	0.01521	-36.4	-3.6	-7.2			
	L-M	1.791-1.751	0.011	-39.2	-6.4	-12.8			
	Deg-B	1.672-1.670	0.000598	-64.4	-31.6	-63.2			
Sarcoid	D-B	1.902-1.672	0.06435	-23.8	9.0	18.0	I	31.3	15.1
	D-Deg	1.902-1.682	0.06138	-24.2	8.6	17.2			
	L-B	1.845-1.672	0.04919	-26.2	6.6	13.2	II	28.9	12.2
	L-Deg	1.845-1.682	0.04215	-26.7	6.1	12.2			
	D-M	1.902-1.751	0.0410	-27.8	5.0	10.0	IV	26.7	4.8
	L-M	1.845-1.751	0.0260	-31.6	1.2	2.4			
	Deg-M	1.682-1.751	0.0200	-34.6	-1.2	-2.4	V		
	D-L	1.902-1.845	0.01521	-36.4	-3.6	-7.2			
	Deg-B	1.682-1.672	0.00298	-50.6	-17.8	-35.6			



Graphic display of the correlation between reflectivity (ordinate) and infused water temperature (abscissa). ● and ◎ show actual measurement data. △: Water temperature in the water bath is 0℃. ★: 5℃ , ○: 15℃ , ▲: 35℃ □: 45℃ , ●: 55℃ , ×: 60℃



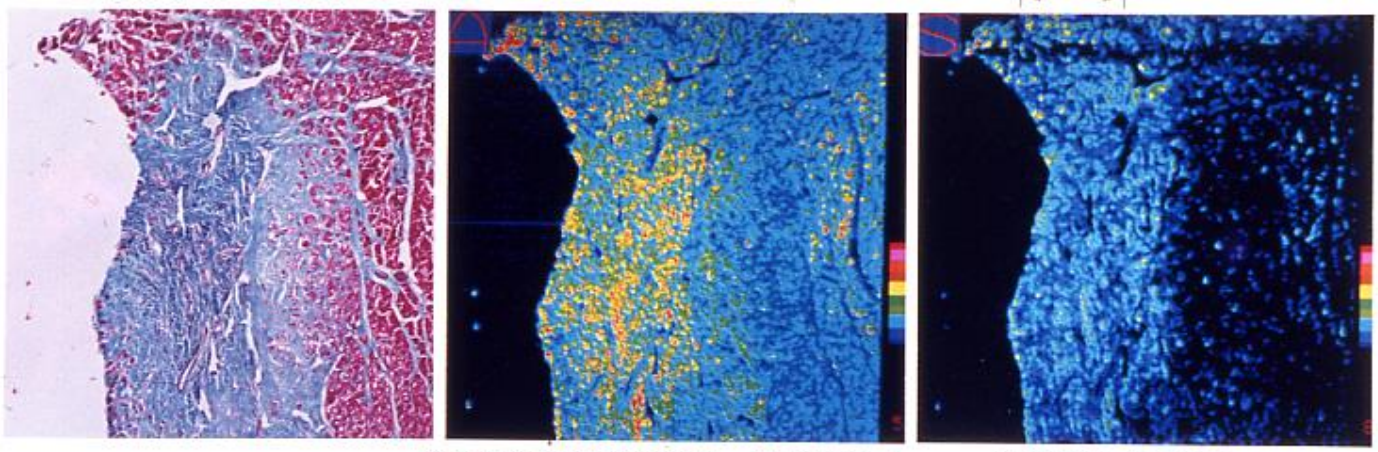
Two-dimensional echogarm of the boundary echo with the smallest reflectivity. Two parallel echoes (white arrow) were obtained at the boundary between 45℃ water in the water bath and the infused water of various temperature. P: the echoes of the infusion tube; B: bottom echo

Editor-in-Chief : F. Dunn
Editors : M. Tanaka · S. Ohtsuki · Y. Saijo

Ultrasonic Tissue Characterization

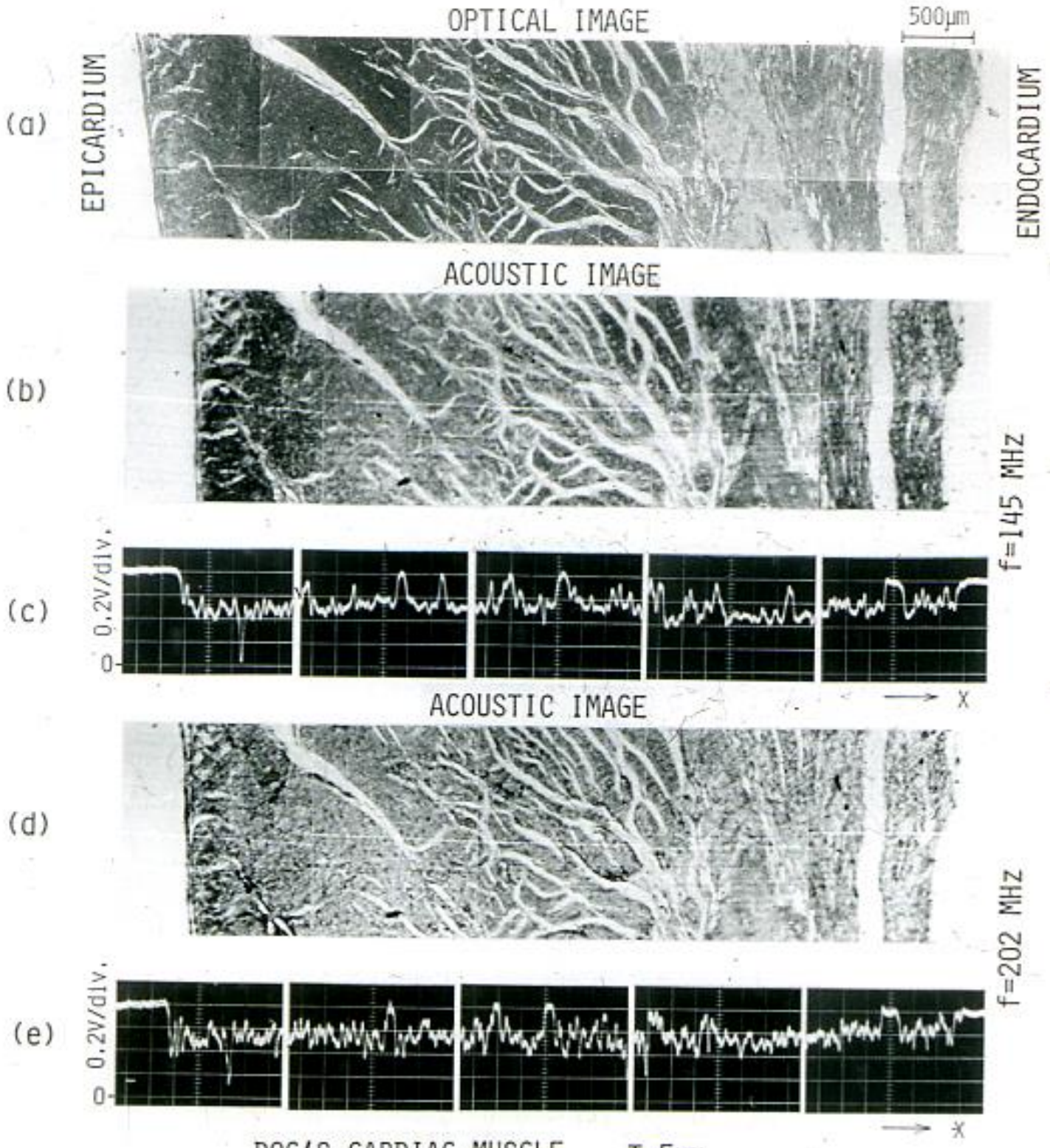
Springer

HYPERTROPHIC CARDIOMYOPATHY



(ATTENUATION 150MHz) SPEED 130MHz

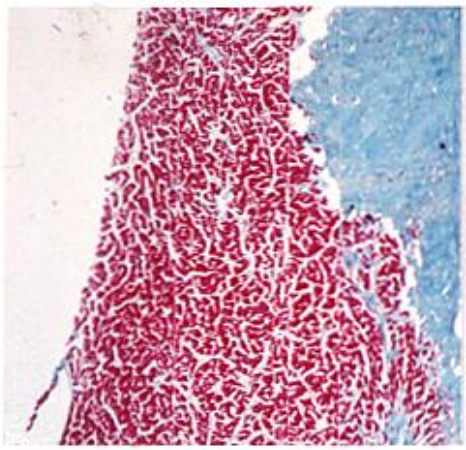
OPTICAL IMAGE ACOUSTIC IMAGE

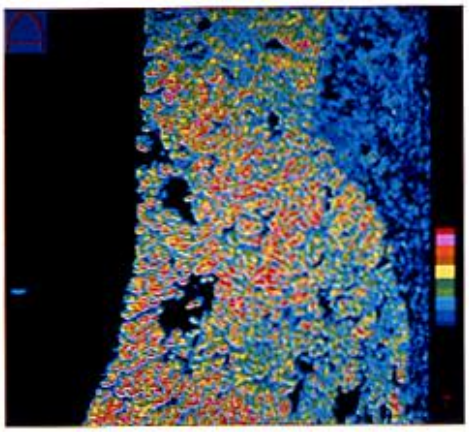


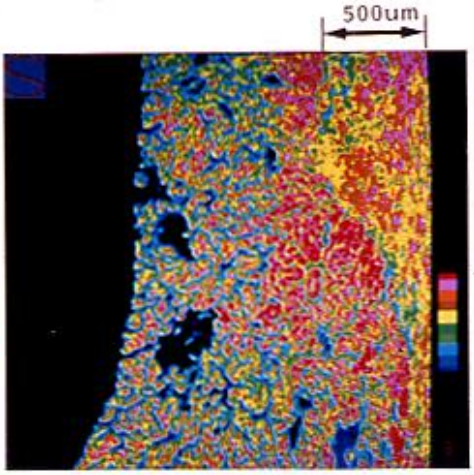
DOG'S CARDIAC MUSCLE T=5μm

REFLECTION MODE (AMPLITUDE)

CARDIAC SARCOIDOSIS







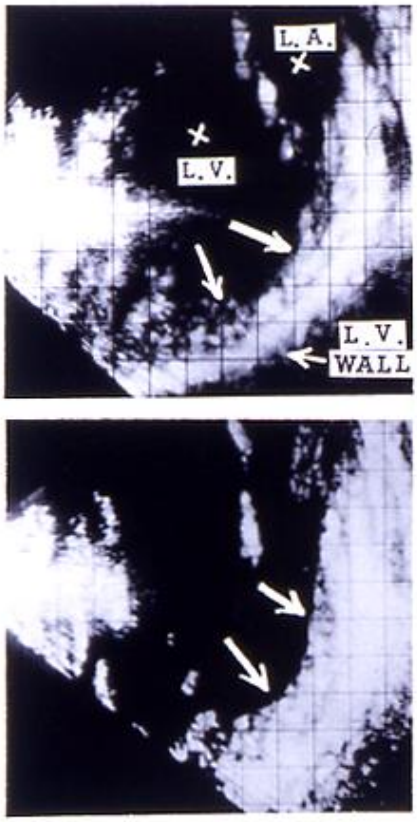
ATTENUATION 130MHz

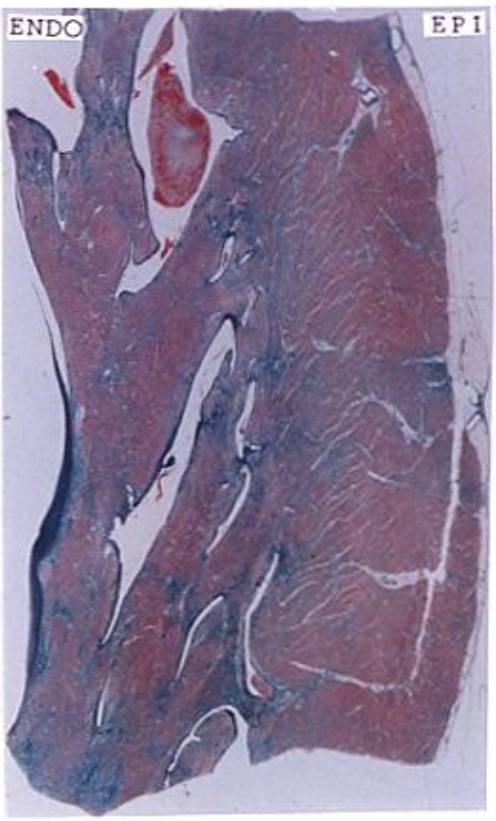
SPEED 120MHz

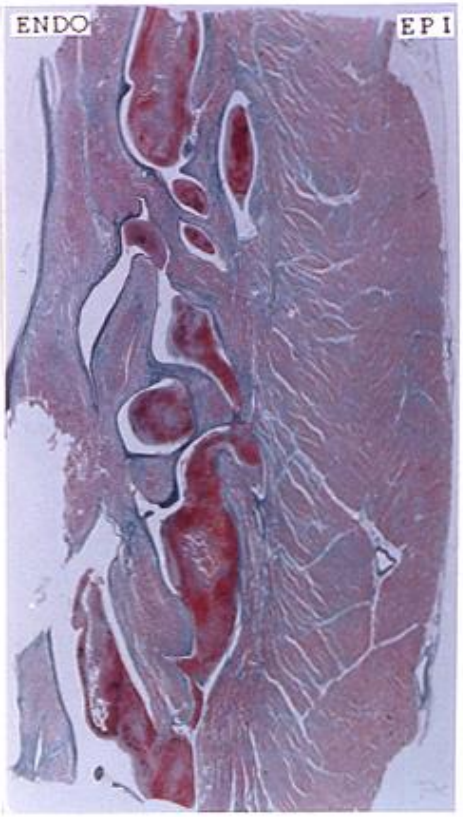
OPTICAL IMAGE

ACOUSTIC IMAGE

CONGESTIVE C M



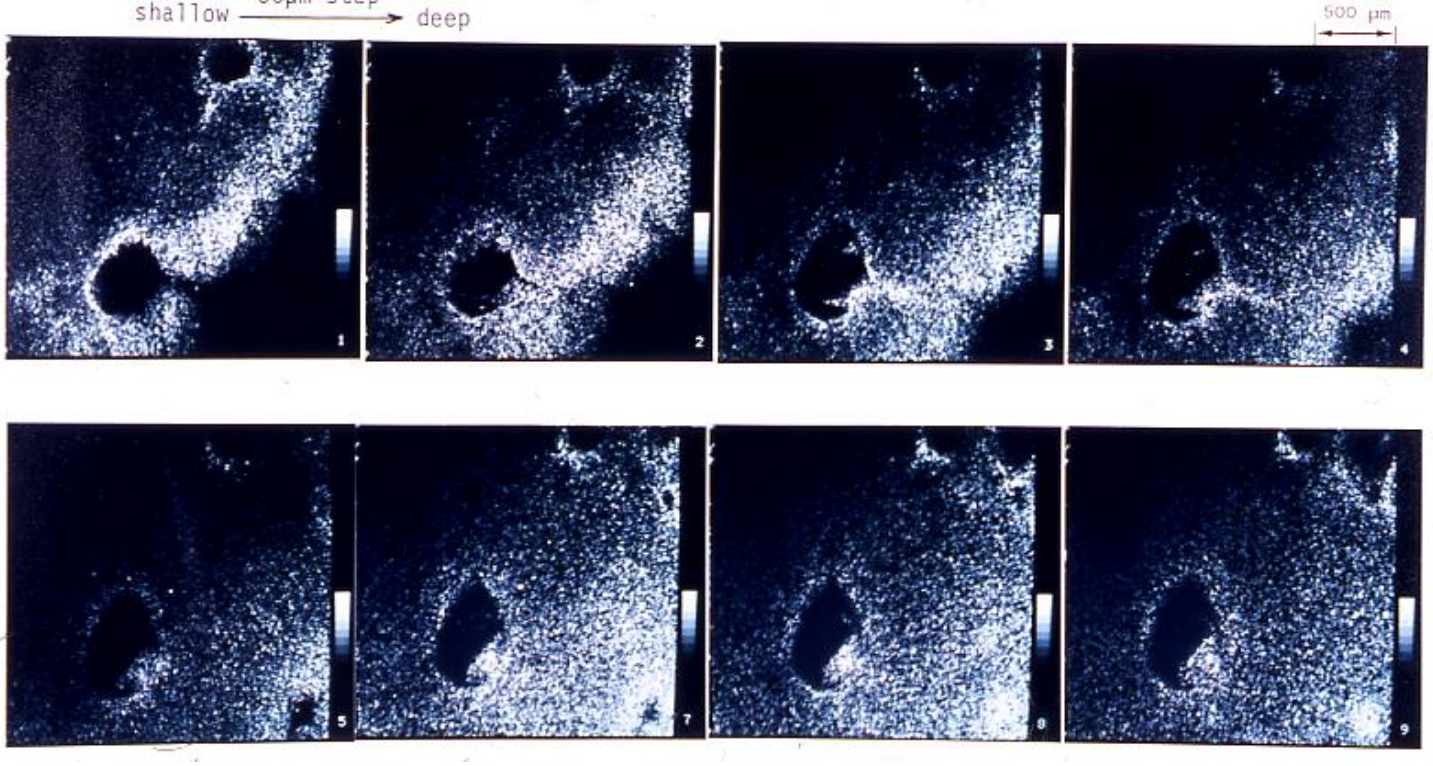




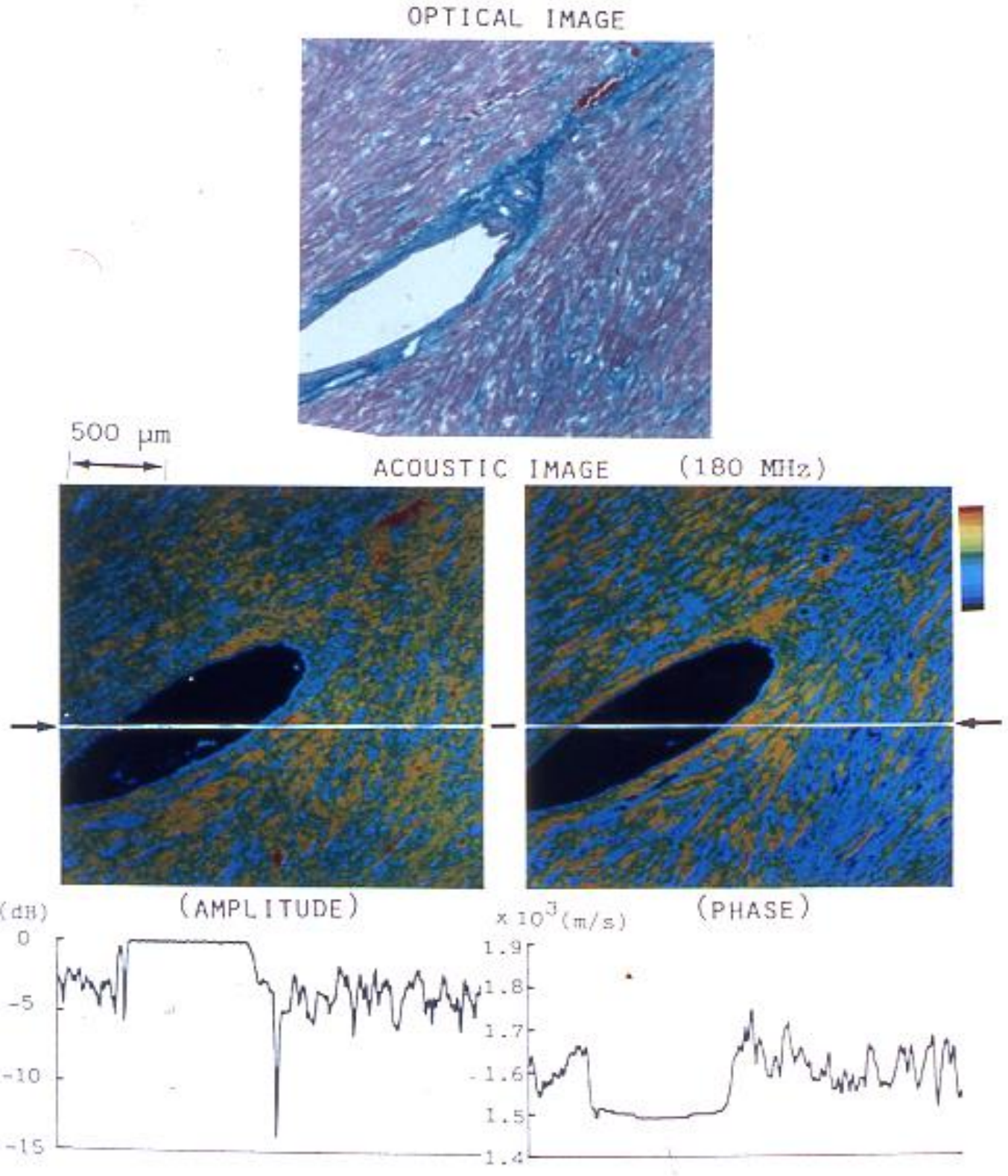
RAT LIVER

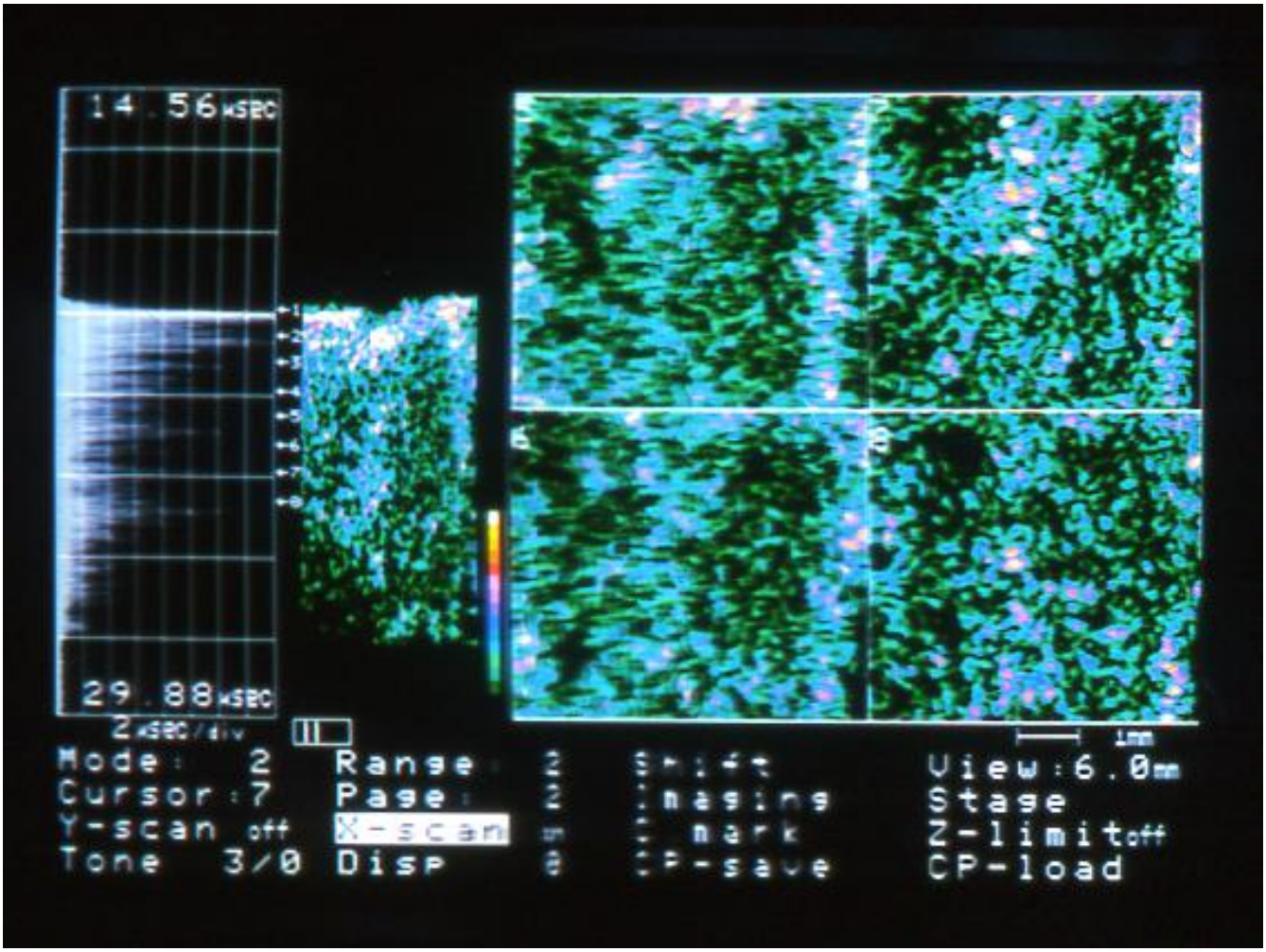
REFLECTION MODE 150MHz

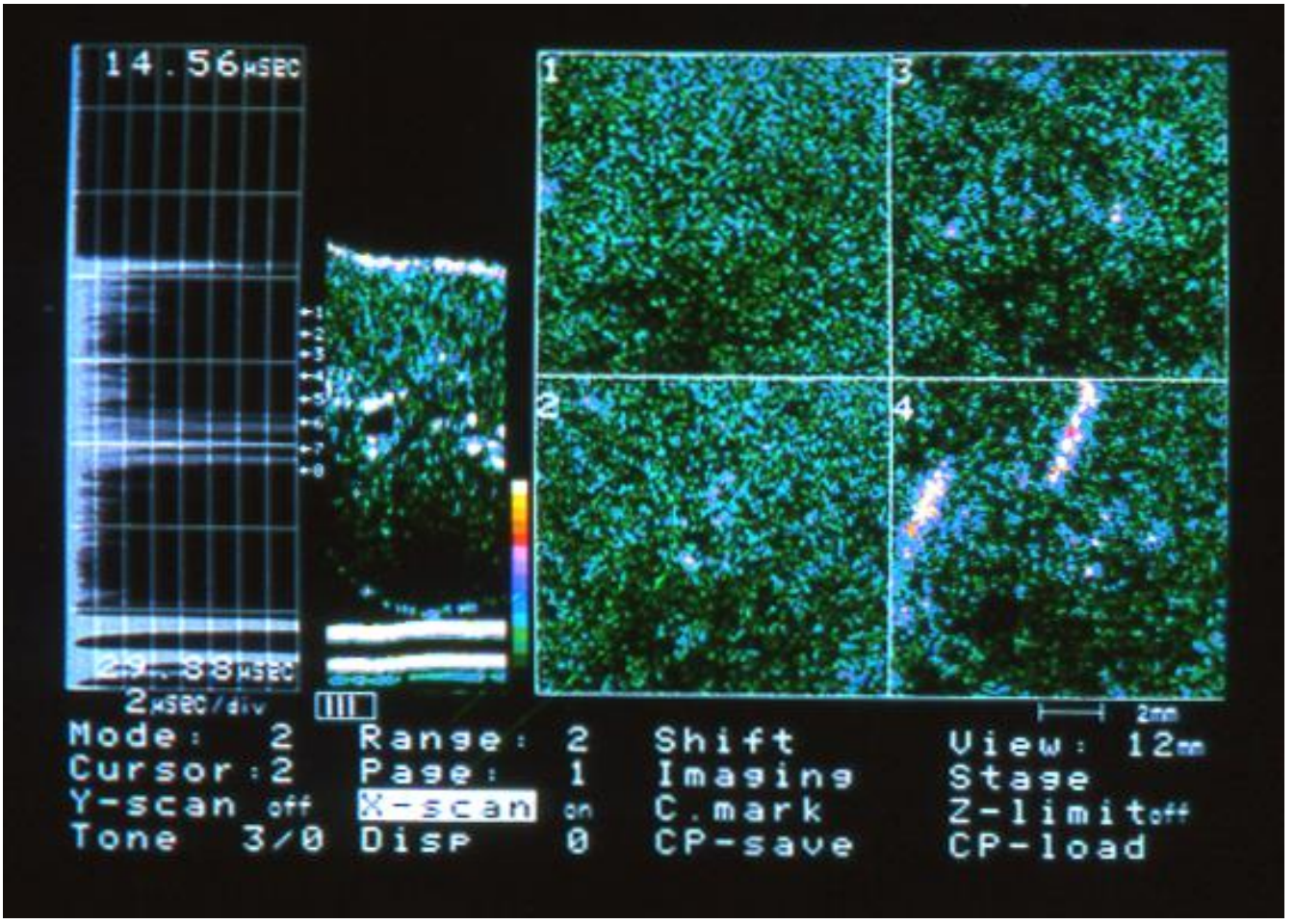
shallow —50μm step→ deep

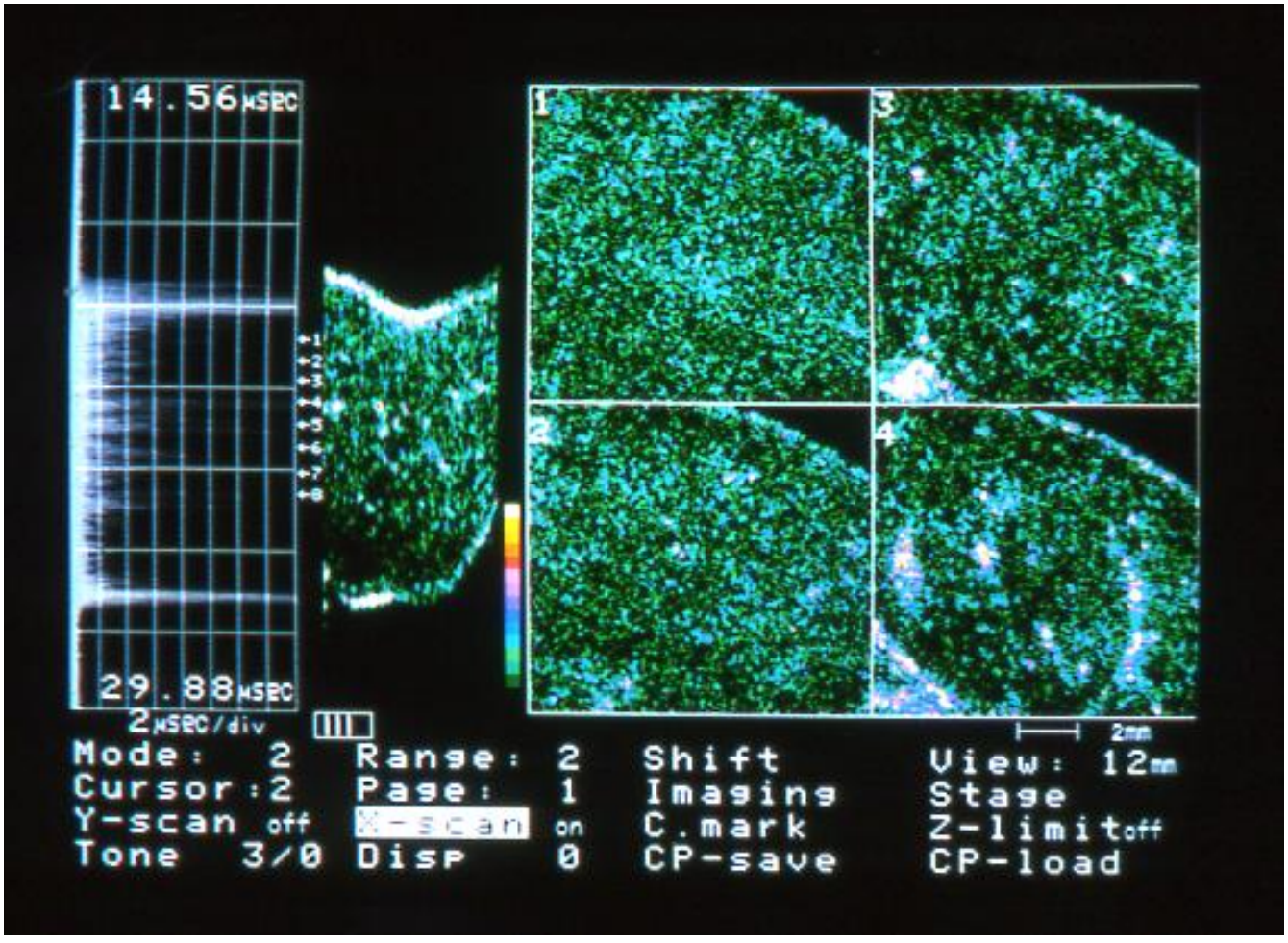


D C M

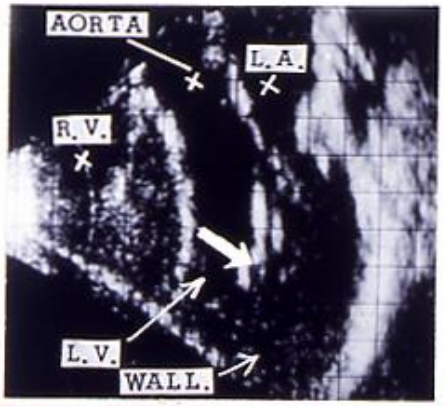

OPTICAL IMAGE
500 μm
ACOUSTIC IMAGE (180 MHz)
(AMPLITUDE)
(PHASE)
(dB)
0
-5
-10
-15
x 10³ (m/s)
1.9
1.8
1.7
1.6
1.5
1.4

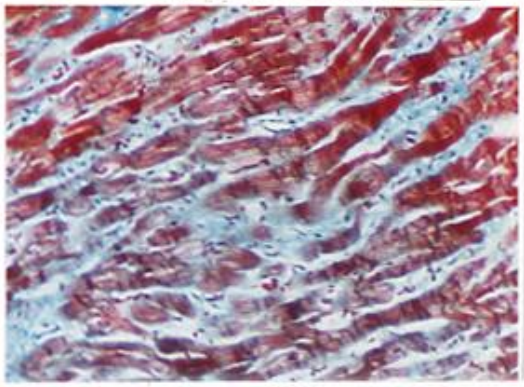

14.56kSEC
29.88kSEC
2kSEC/div
1mm
Mode: 2
Cursor:7
Y-scan off
Tone 3/0
Range
Page:
X-scan
Disp
Shift
Imaging
mark
CP-save
View:6.0mm
Stage
Z-limit off
CP-load

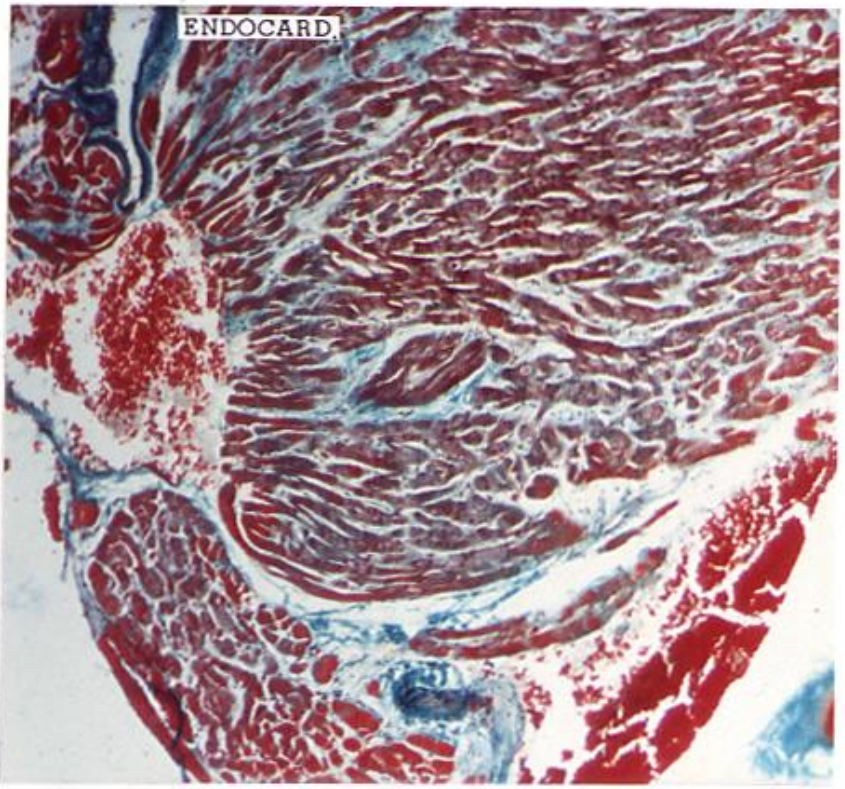

14.56μSEC
2μSEC/div
1
2
3
4
2mm
Mode: 2
Cursor: 2
Y-scan off
Tone 3/0
Range: 2
Page: 1
X-scan on
Disp 0
Shift
Imaging
C.mark
CP-save
View: 12mm
Stage
Z-limit off
CP-load


14.56MSEC
29.88MSEC
2MSEC/div
1
3
2
4
2mm
Mode: 2
Cursor:2
Y-scan off
Tone 3/0
Range: 2
Page: 1
X-scan on
Disp 0
Shift
Imaging
C.mark
CP-save
View: 12mm
Stage
Z-limit off
CP-load

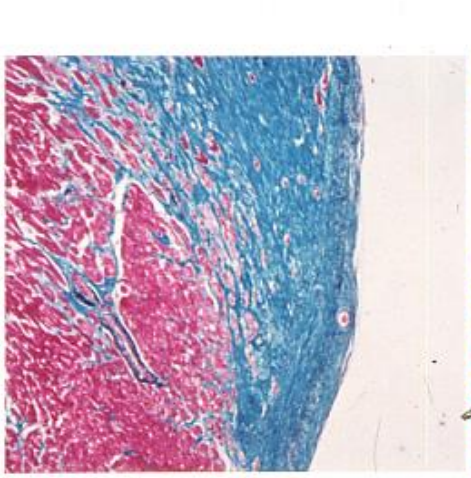
IHCM

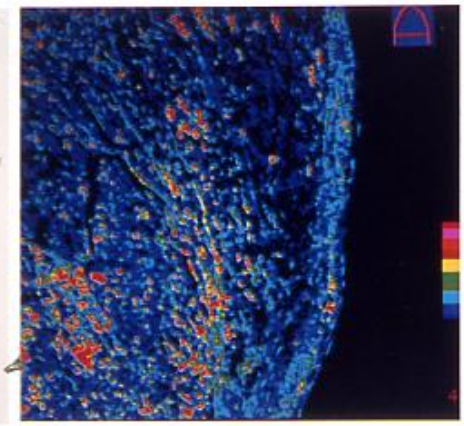


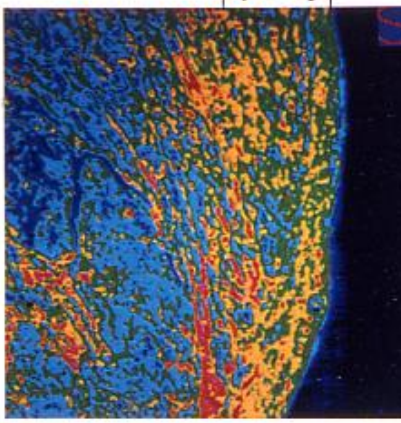




DILATED CARDIOMYOPATHY







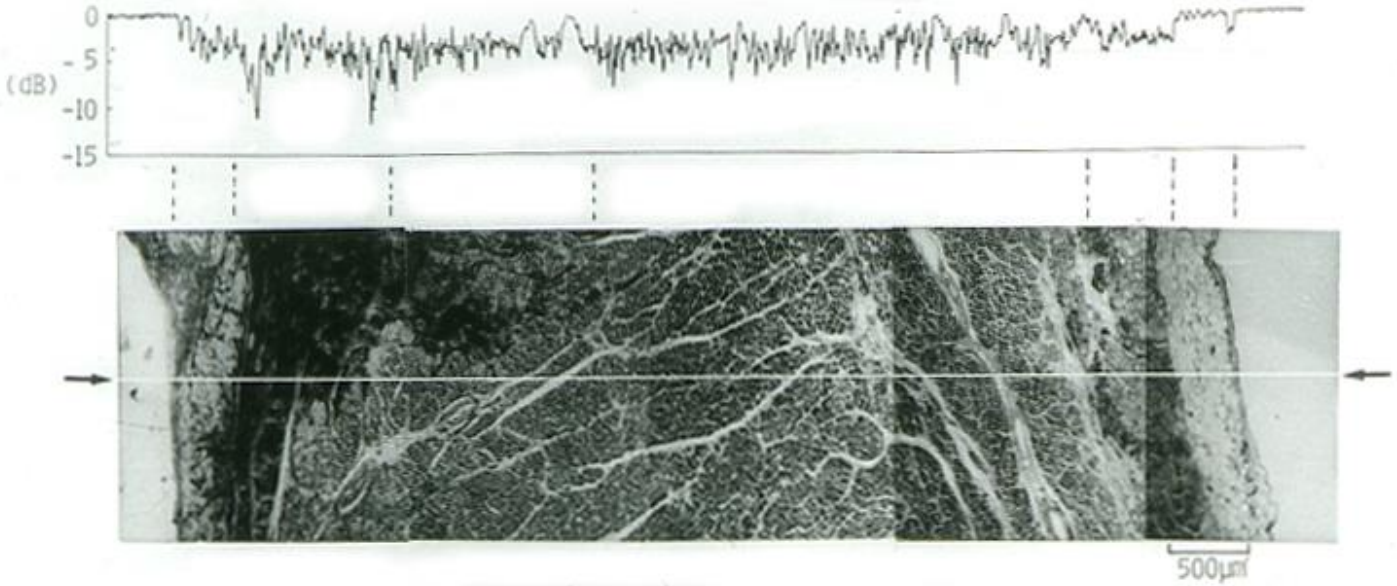
(ATTENUATION 145)

(SPEED 130)

OPTICAL IMAGE

ACOUSTIC IMAGE

M I



AMPLITUDE IMAGE (130 MHz)