RESULTS

This study was conducted on 50 eyes of 43 randomly selected diabetic patients suffering from diabetic retinopathy with some form of opaque ocular media who attended the outpatient ophthalmic clinic.

A) Personal and disease characteristics of patients with DR:

Table (1): Demography of patients.

	Variable	Number of patients	Percentage %
Gender	Male	16 patients	37.20%
	Female	27 patients	62.79%
Age	> 40ys	38 patients	88.37%
	≤ 40ys	5 patients	11.62%
Type of DM	IDDM	15 patients	34.88%
	NIDDM	28 patients	65.11%
Duration of DM	10 years	10 patients	23.25%
	> 10 years	33 patients	76.74%

Table (2): Distribution of patients with DR according to visual acuity.

Visual acuity	Number of eyes	Percentage %
PL	4 eyes	8%
HM	11 eyes	22%
CF	6 eyes	12%
1/60	5 eyes	10%
2/60	5 eyes	10%
3/60	5 eyes	10%
4/60	6 eyes	12%
5/60	8 eyes	16%

Table (3): Distribution of patients with DR according to history of previous LASER treatment:

Previous laser treatment	Number of patients	Percentage %
Once	5 eyes	10%
2 times	8 eyes	16%
3 times	7 eyes	14%
4 times	4 eyes	8%
Total	**24 eyes**	**48%**

B) Posterior segment changes of patients with DR with opaque ocular media by echographic examination:

I) Vitreous findings by echographic examination:

Table (4): Vitreous findings by echographic examination.

Vitreous findings	Number of eyes	Percentage %
PVD	39 eyes	78%
Vitreal membranes	9 eyes	18%
Vitreous haemorrhage	18 eyes	36%

1- Posterior vitreous detachment (PVD):

Ultrasound could detect (PVD) in 39 eyes (78%).

Table (5): PVD

PVD	Number of eyes	Percentage %
Partial	30 eyes	76.92 %
Total	9 eyes	30.07 %
Thin	28 eyes	71.79 %
Thick	11 eyes	28.20 %
Attached to retina	8 eyes	20.51 %

2- Vitreal membranes:

Vitreal membranes were detected by ultrasound examination in 9 eyes (18%).

Among the 9 eyes where ultrasound could detect vitreal membranes, there were the following additional data which were obtained by ultrasound examination :

- In 2 eyes (22.22%) ultrasound could detect underlying tractional retinal detachment (TRD).
- In 5 eyes (55.56%), ultrasound could detect underlying PVD.
- In one eye (11.11%), ultrasound can detect underlying preretinal haemorrhage.

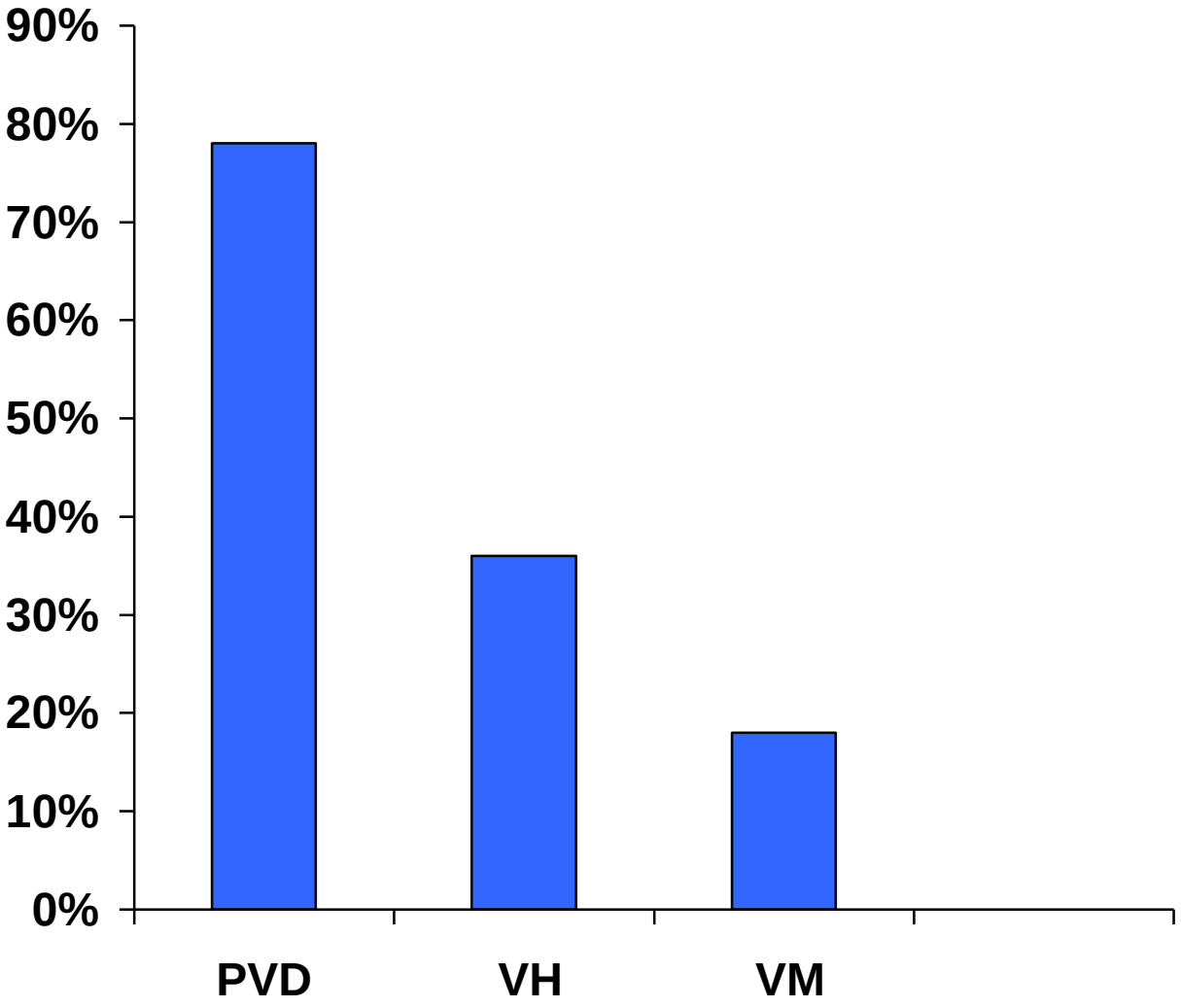
3- Vitreous haemorrhage:

Vitreous haemorrhage was detected in 18 eyes (36%) by both ultrasound and clinical examination but there were additional data (underlying pathology) which can be provided by ultrasound examination.

Table (6): Underlying pathology under the vitreous haemorrhage.

Underlying pathology with vitreous haemorrhage	**Ultrasound examination**	**Percentage %**
PVD	12eyes	66.67%
Vitreal membranes	1eye	5.56%
Preretinal haemorrhage	3eyes	16.67%
TRD	2eyes	11.11%

Vitreous findings by echographic examination in the present study. Fig (13)



PVD: posterior vitreous detachment.

VH: vitreous haemorrhage.

VM: vitreal membranes.

II) Retinal findings of patients with DR with presence of opaque ocular media by echographic examination:

Table (7): Retinal finding by ultrasound examination.

Retinal finding by ultrasound examination	Number of eyes	Percentage %
TRD	8 eyes	16 %
Subhyaloid haemorrhage	3 eyes	6%
Subretinal haemorrhage	1 eye	2%
Macular thickening	3 eyes	6%

Retinal finding by ultrasound examination.

1- Preretinal haemorrhage:

Table (7) shows that preretinal haemorrhage could be detected by ultrasound examination in 3 eyes (6%).

In the 3 eyes preretinal haemorrhage could be detected only by ultrasound examination and could not be detected clinically as they were obscured by overlying vitreous haemorrhage.

2- Subretinal haemorrhage:

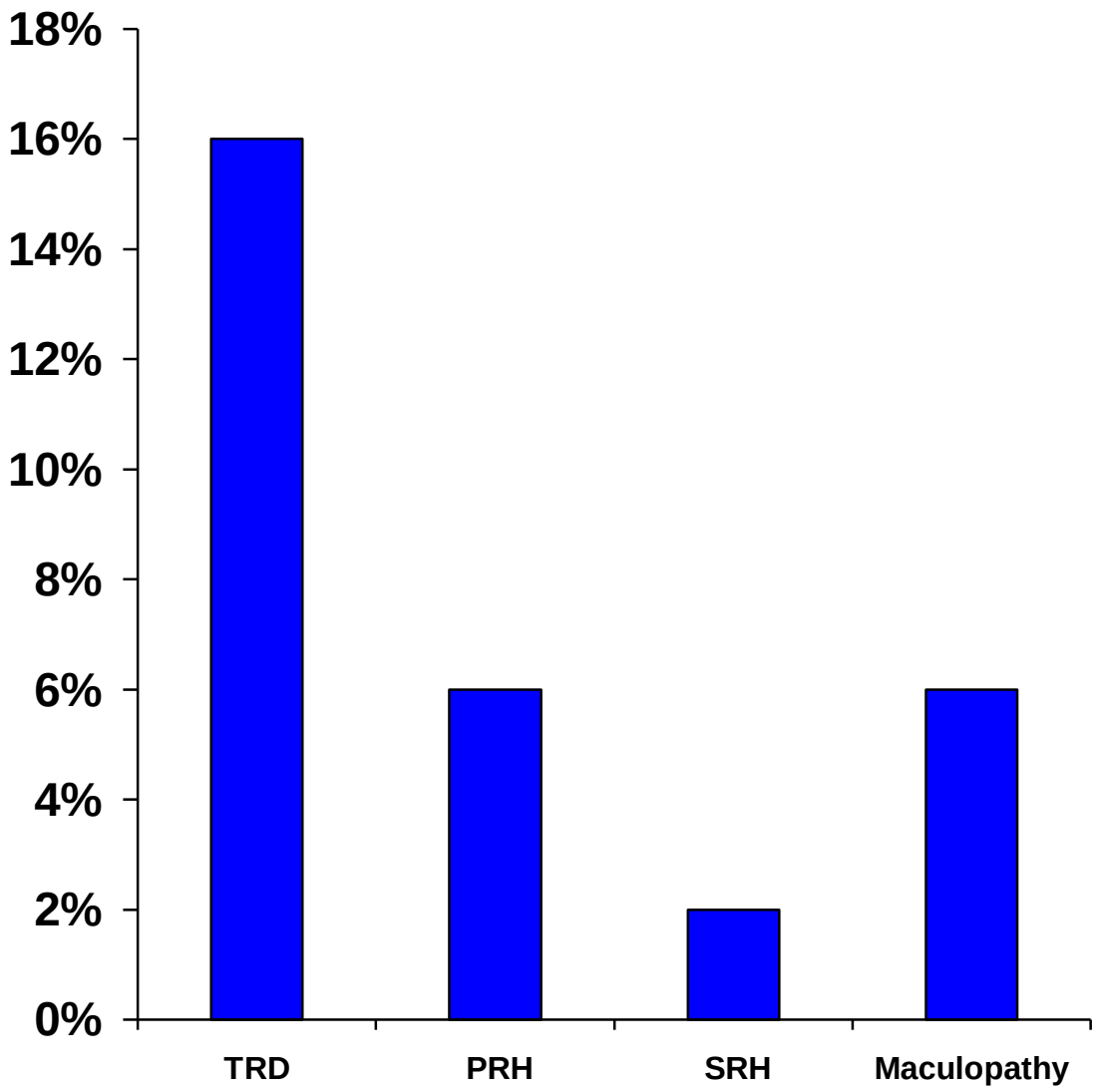
Table (7) shows that Ultrasound could detect subretinal haemorrhage in 1 eye (2%).This haemorrhage could not be detected clinically due to overlying TRD and extensive vitreal membranes.

3- Tractional retinal detachment:

Table (7) shows that TRD was detected by ultrasound in 8 eyes (16%). Among the 8 eyes where ultrasound could detect TRD, there were the following data:

- The morphology of RD as seen by ultrasound was as follows:
  - -Tent-like in 4 eyes (50%).
  - -Table-top in 2 eyes (25%).
  - - Total RD (funnel shape) in 2 eyes (25%).
- In the 8 eyes where TRD could be detected , the point of traction is determined by ultrasound examination were obtained as follows:
  - - In 4 cases, the points of traction were at the optic disc (50%).
  - - In 4 cases, the points of traction were at the macula (50%).

Retinal findings by echographic examination in the present study. Fig (14)



TRD: tractional retinal detachment.

PRH: preretinal haemorrhage.

SRH: subretinal haemorrhage.

Examples of ultrasonographic findings showing some of the complications of diabetic retinopathy: (figure 15:27)

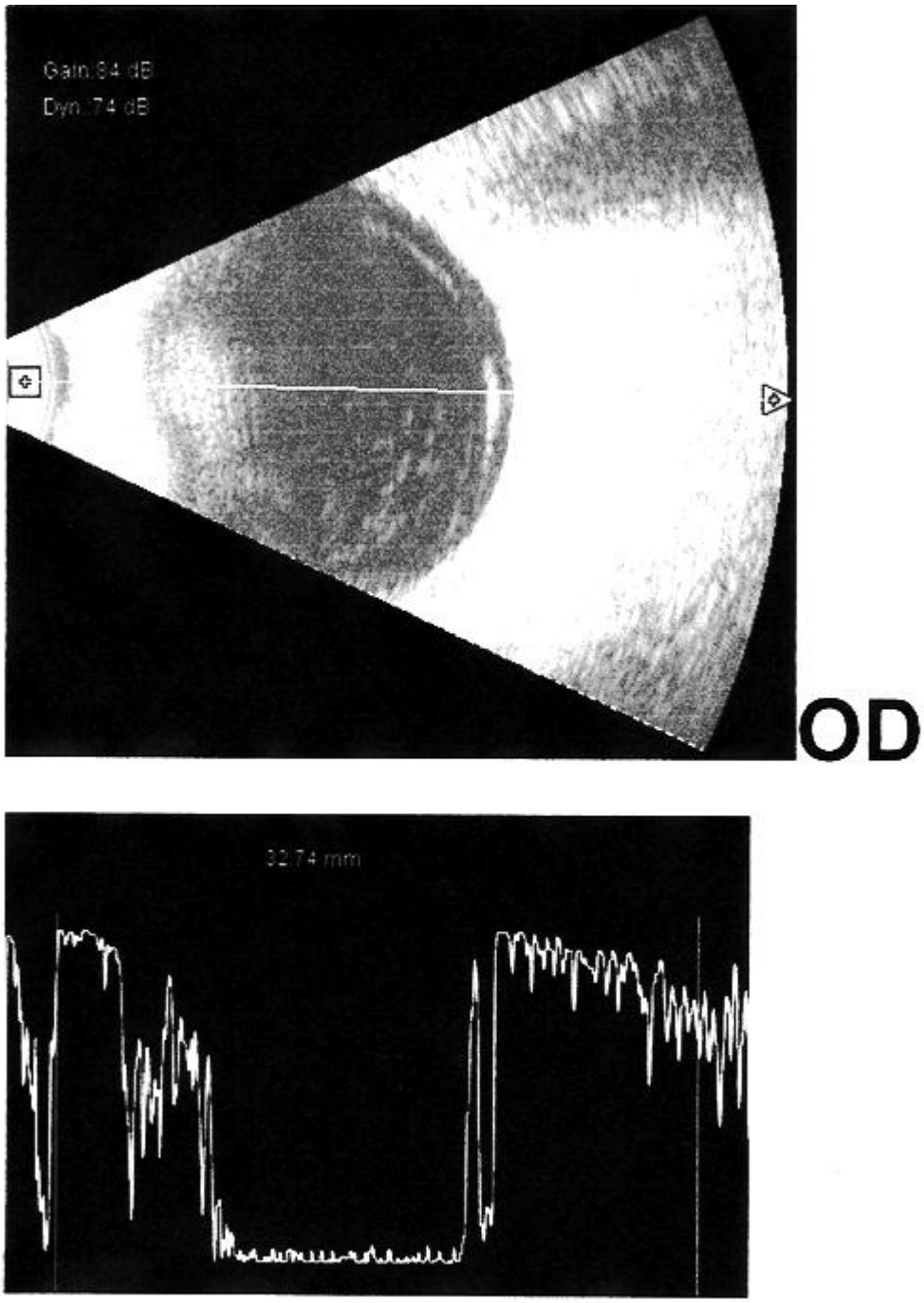


Figure (15): Ultrasonographic picture shows total posterior vitreous detachment and moderate vitreous haemorrhage.

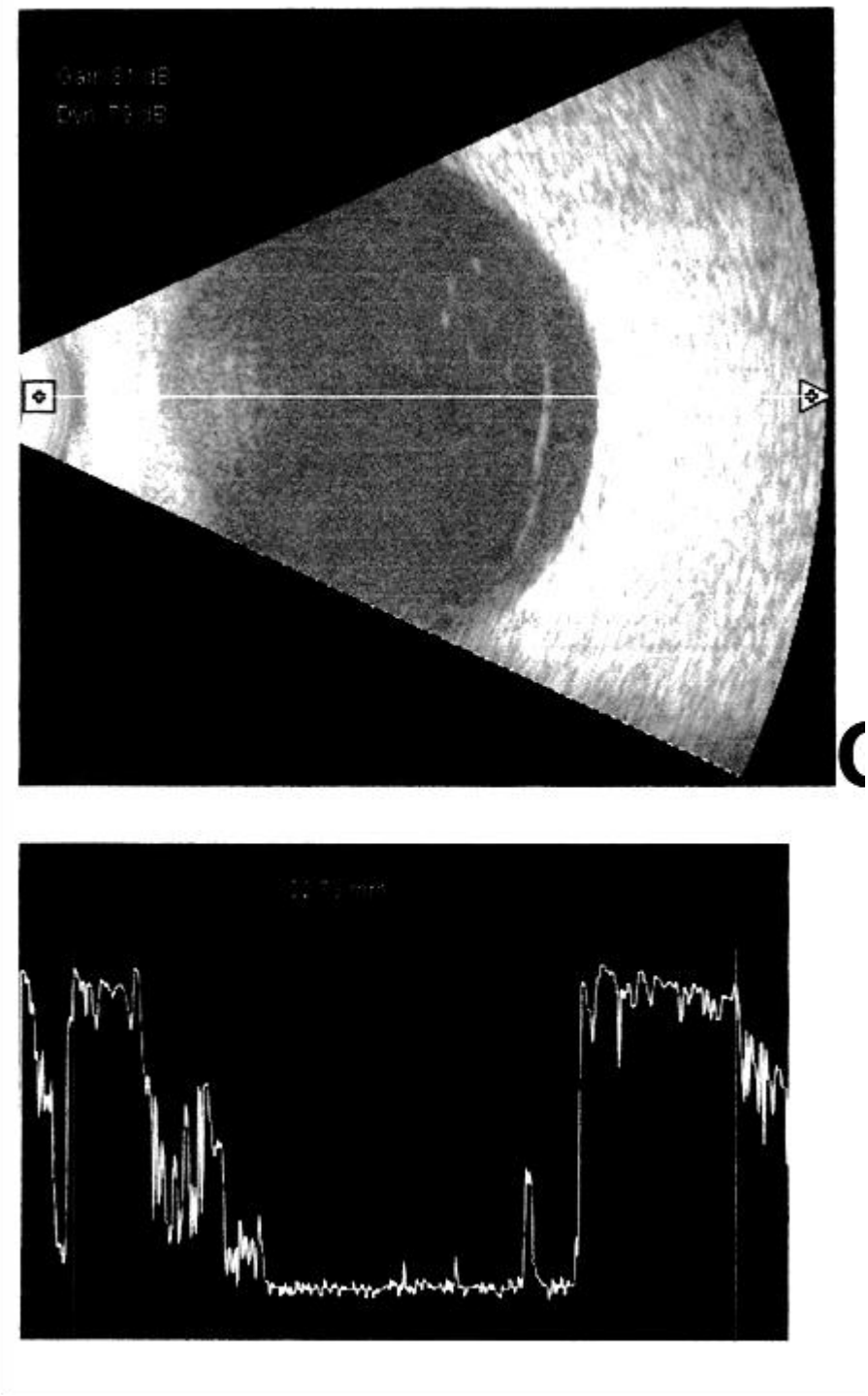


Figure (16): Ultrasonographic picture shows total posterior vitreous detachment.

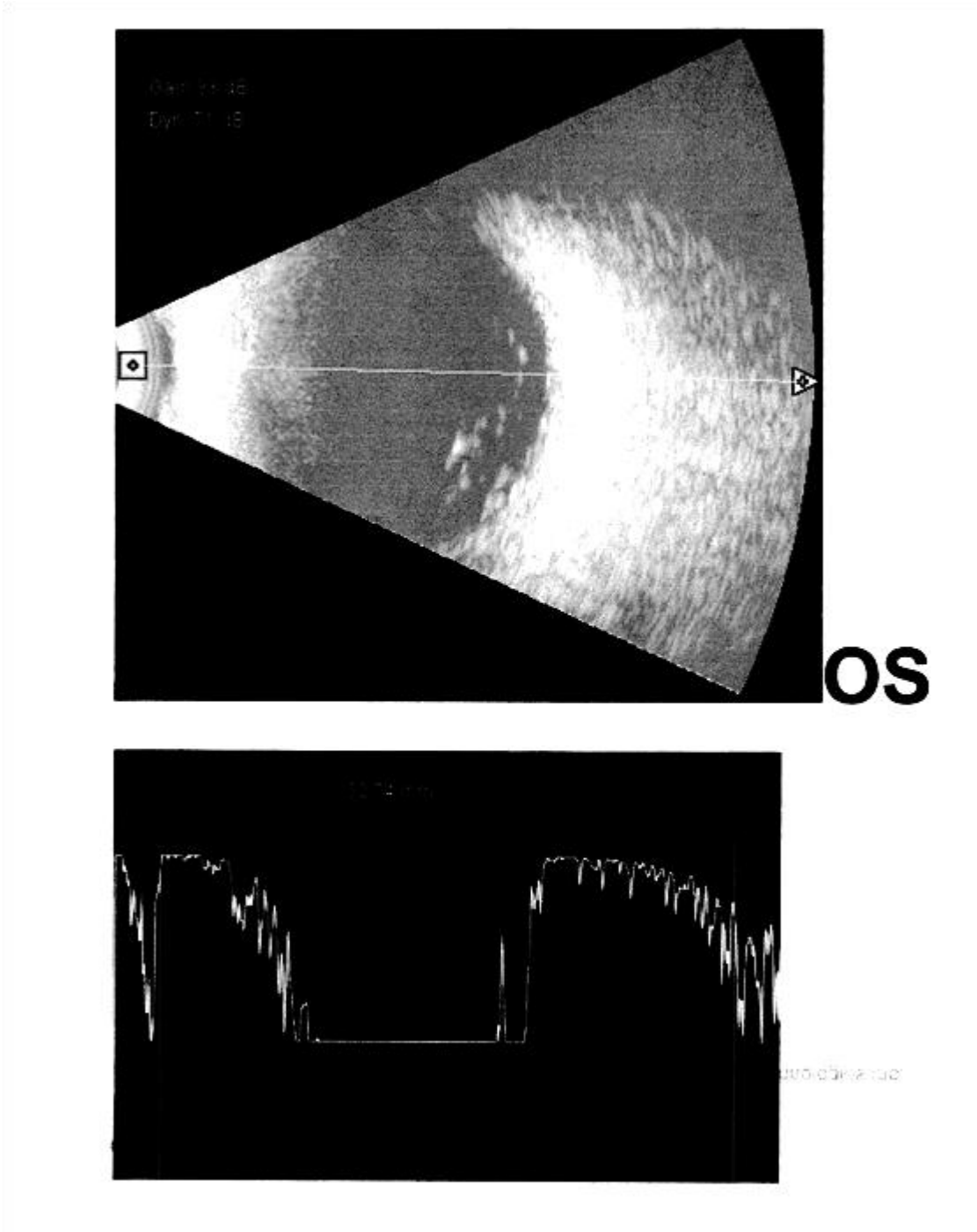


Figure (17): Ultrasonographic picture shows partial posterior vitreous detachment and organized vitreous haemorrhage.

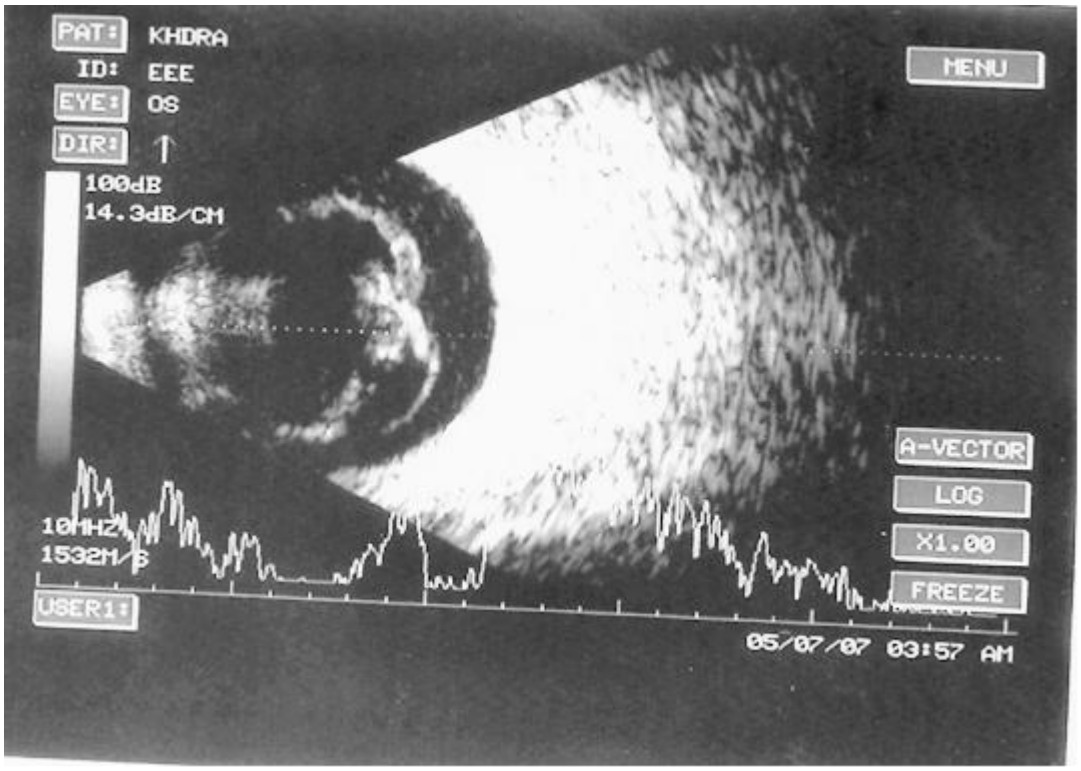


Figure (18): Ultrasonographic picture shows total posterior vitreous detachment and organized vitreous haemorrhage and subhyaloid haemorrhage.

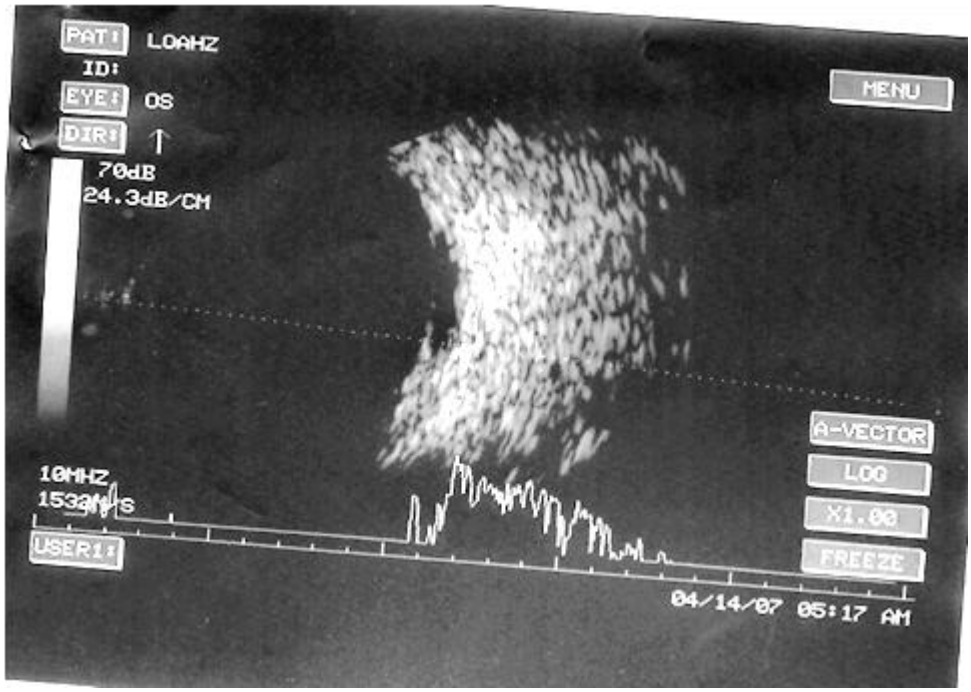


Figure (19): Ultrasonographic picture shows partial posterior vitreous detachment

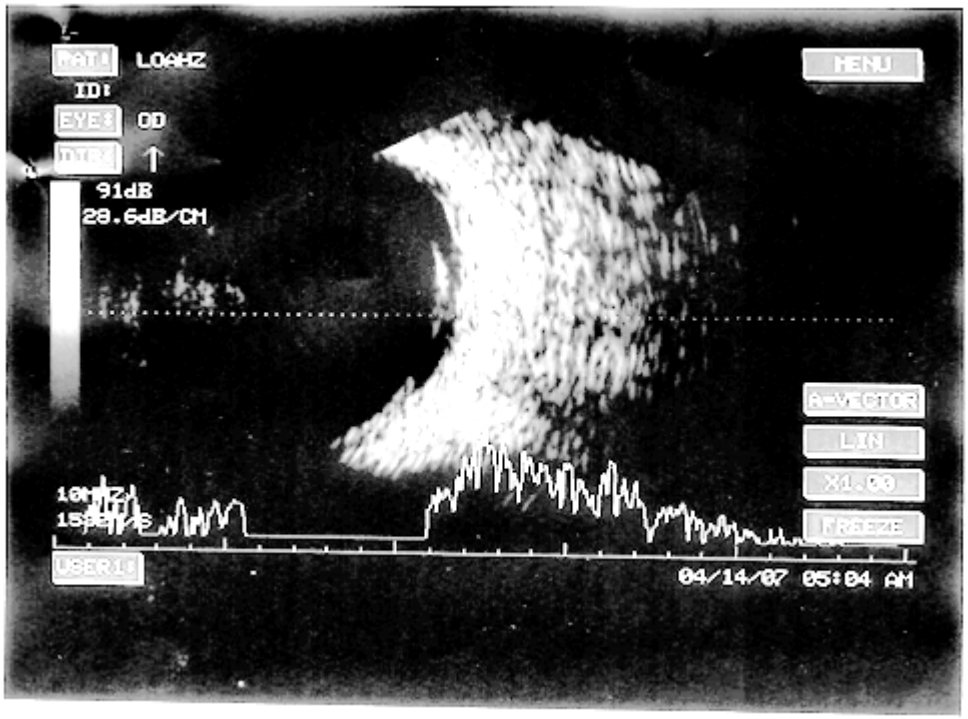


Figure (20): Ultrasonographic picture shows vitreal membrane with fibrovascular tuft attached to posterior pole .

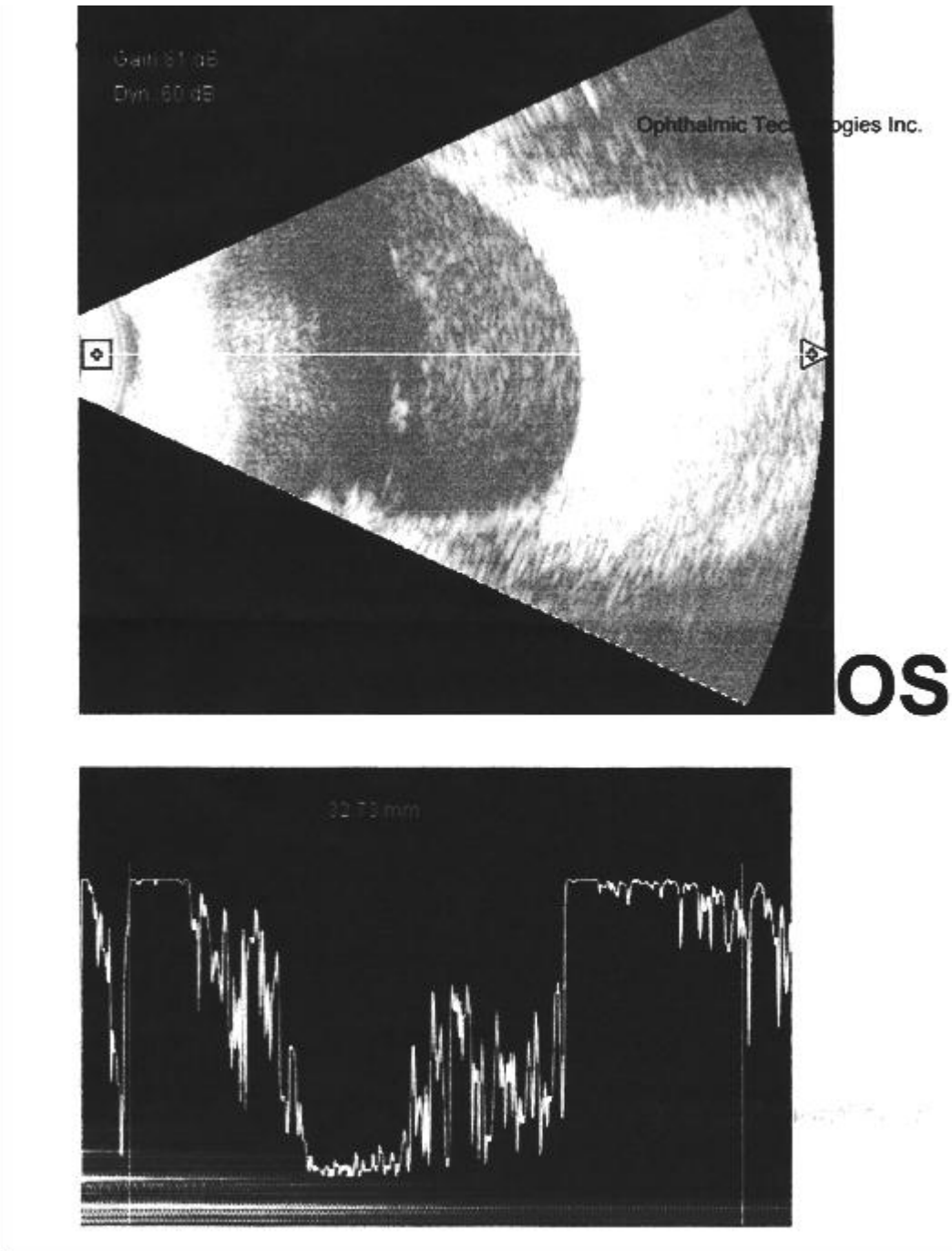


Figure (21): Ultrasonographic picture shows subhyaloid vitreous haemorrhage.

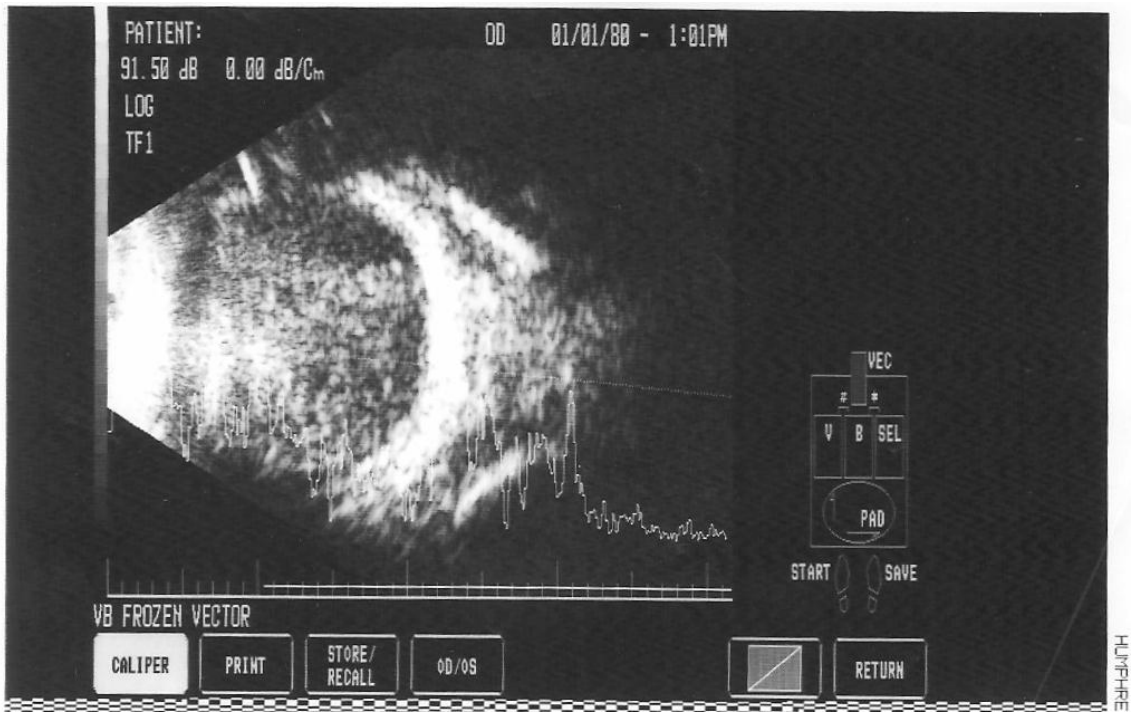


Figure (22): Ultrasonographic picture shows massive vitreous haemorrhage.

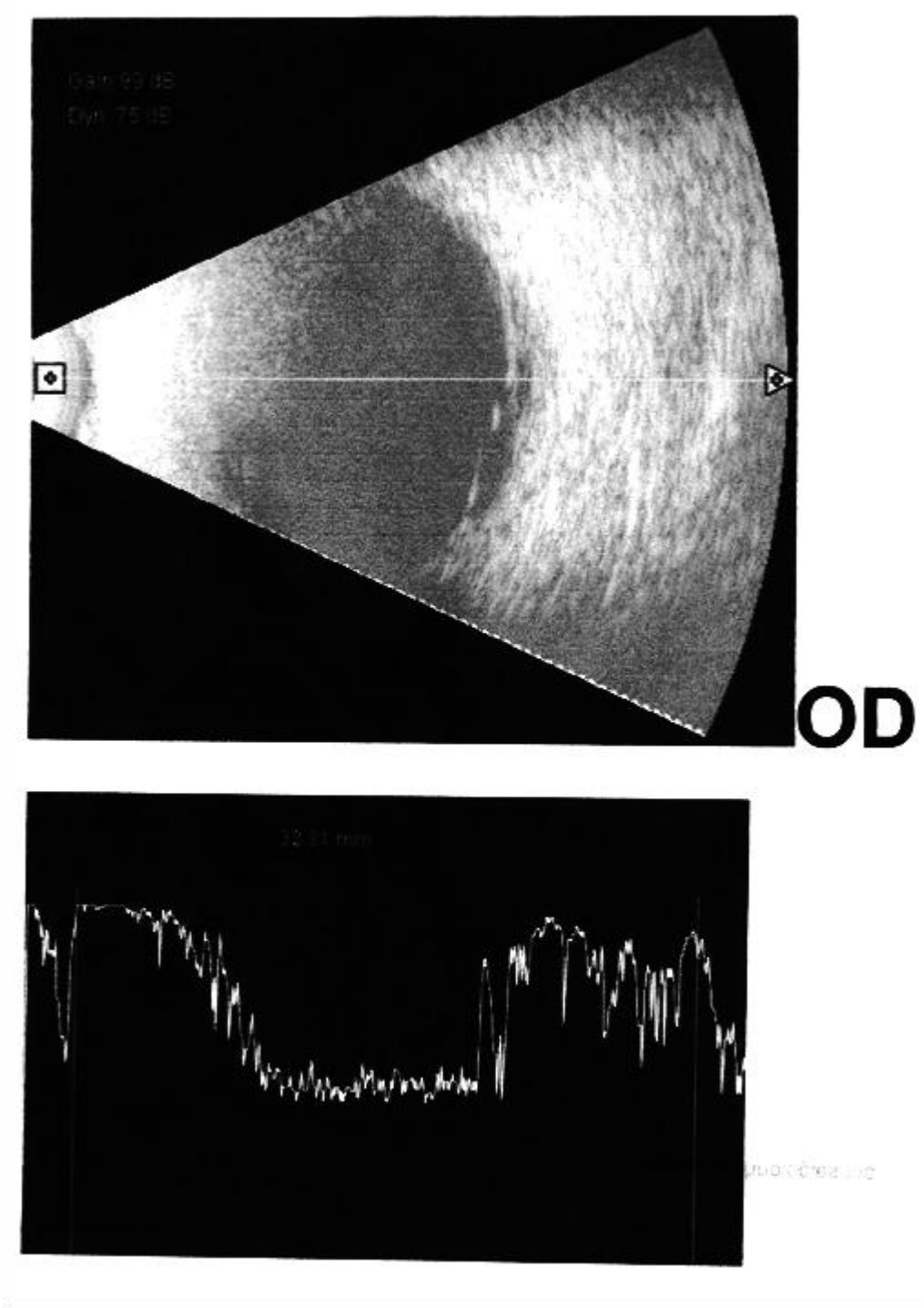


Figure (23): Ultrasonographic picture shows tractional retinal detachment .

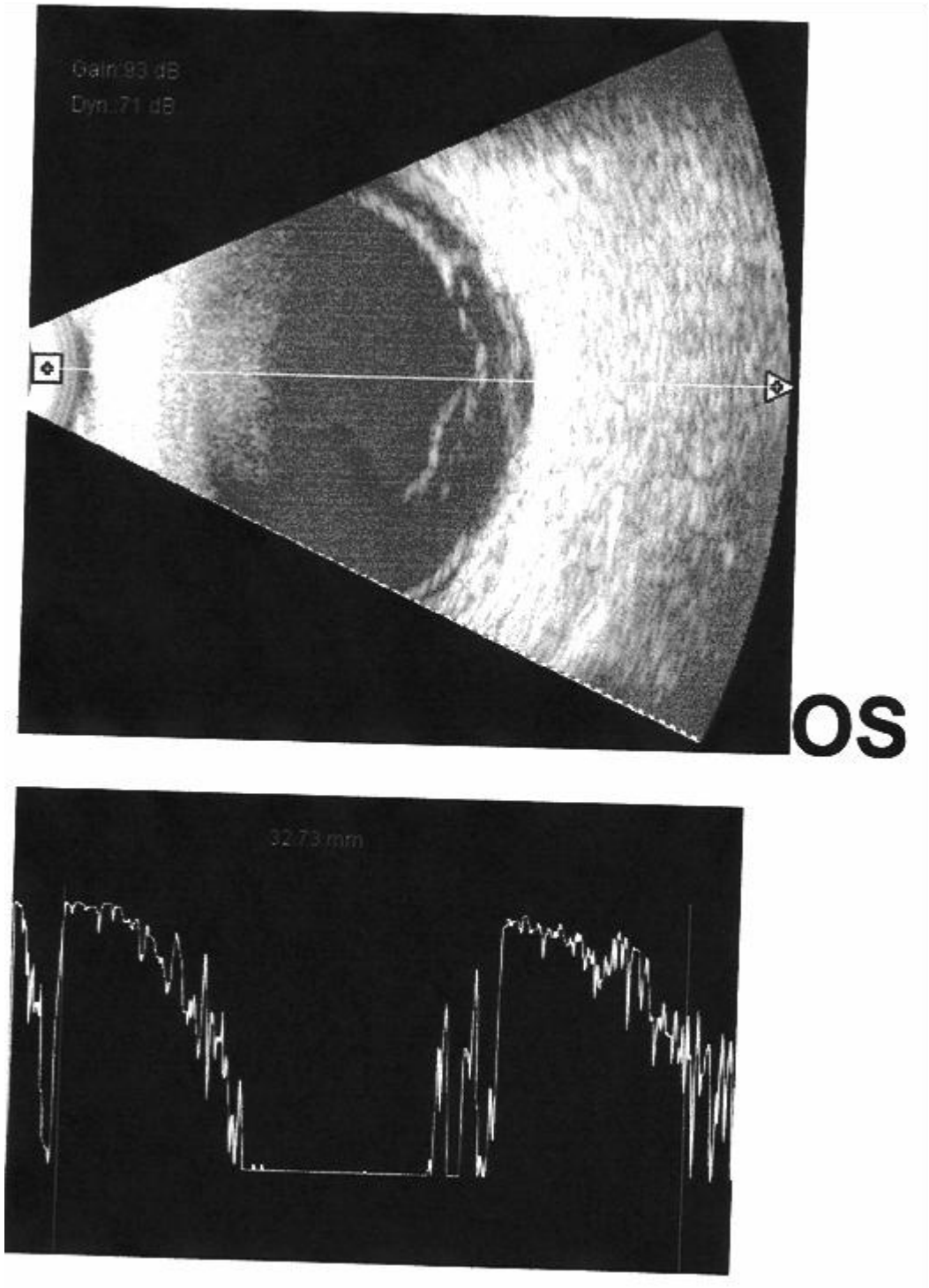


Figure (24): Ultrasonographic picture shows posterior vitreous detachment and extensive vitreal membranes with underlying TRD.

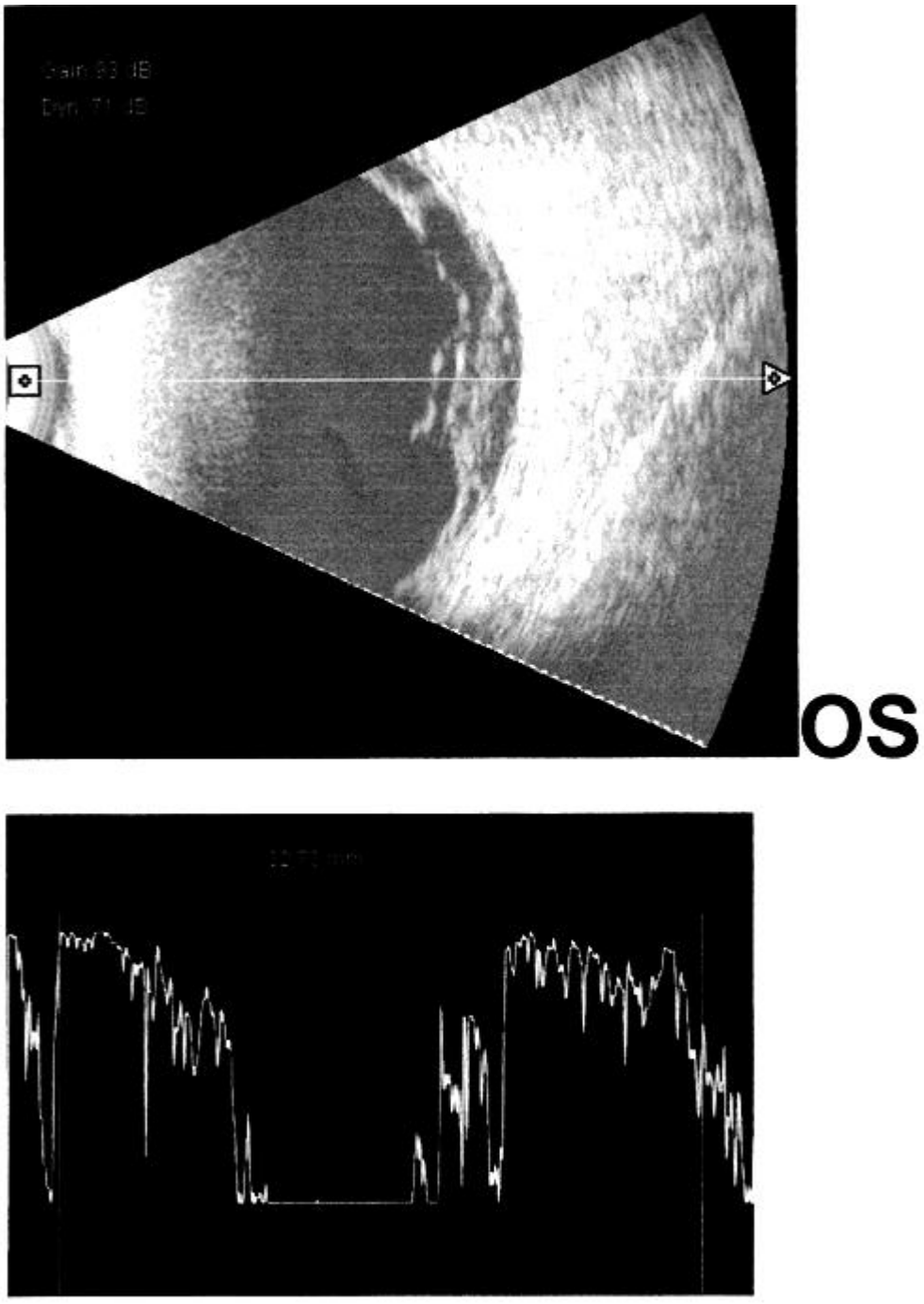


Figure (25): Ultrasonographic picture shows posterior vitreous detachment and extensive vitreal membranes with underlying TRD and subretinal haemorrhage.

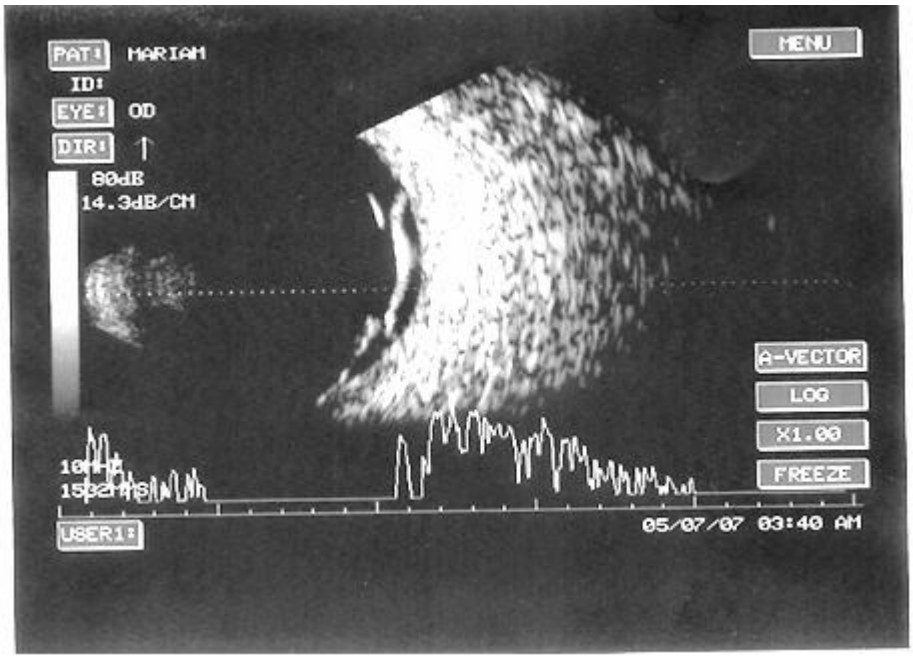


Figure (26): Ultrasonographic picture shows partial posterior vitreous detachment and tint TRD temporal to optic nerve head and macular thickening.

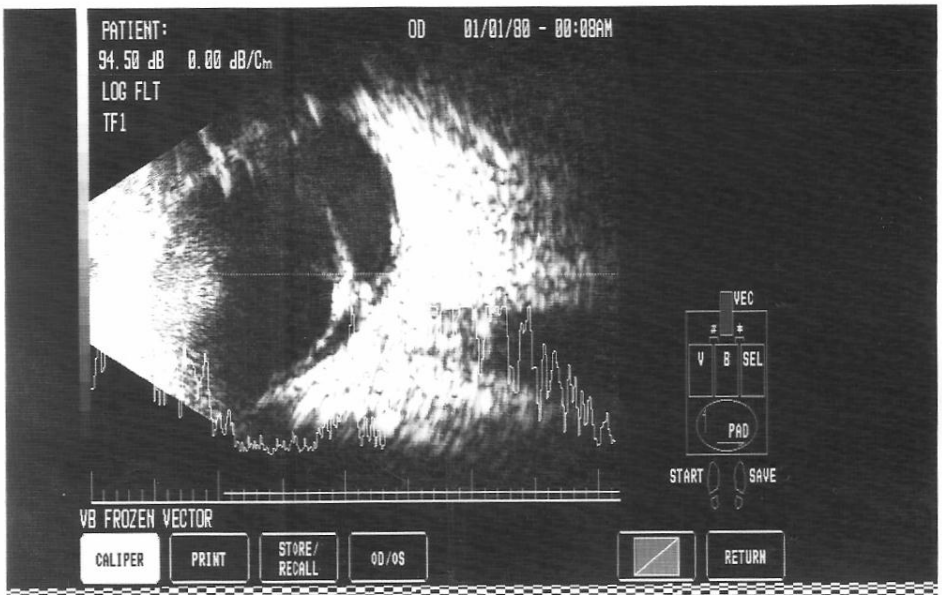


Figure (27): Ultrasonographic picture shows partial posterior vitreous detachment and fibrovascular membrane and area of tractional retinal detachment at optic nerve head.