

«BASHKIR STATE MEDICAL UNIVERSITY»  
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

Stages of

# *Diabetic* retinopathy

Students Scientific  
Society of  
the Department of  
Ophthalmology

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student of the 6th course of 606 a group

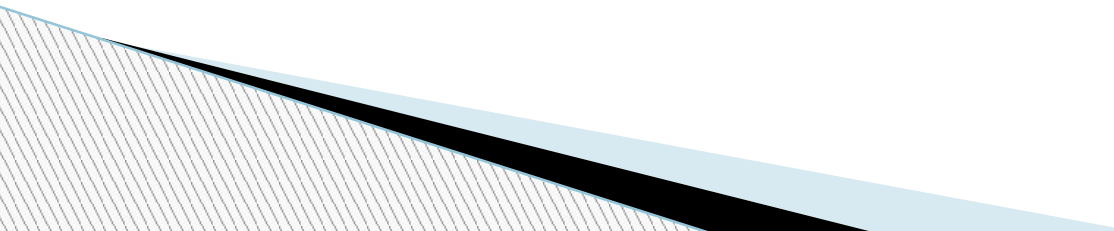


# Diabetic retinopathy



**Diabetic retinopathy — one of the heaviest complications of diabetes, the manifestation of diabetic microangiopathy striking vessels of a retina of an eyeball**

# Stages of Diabetic Retinopathy

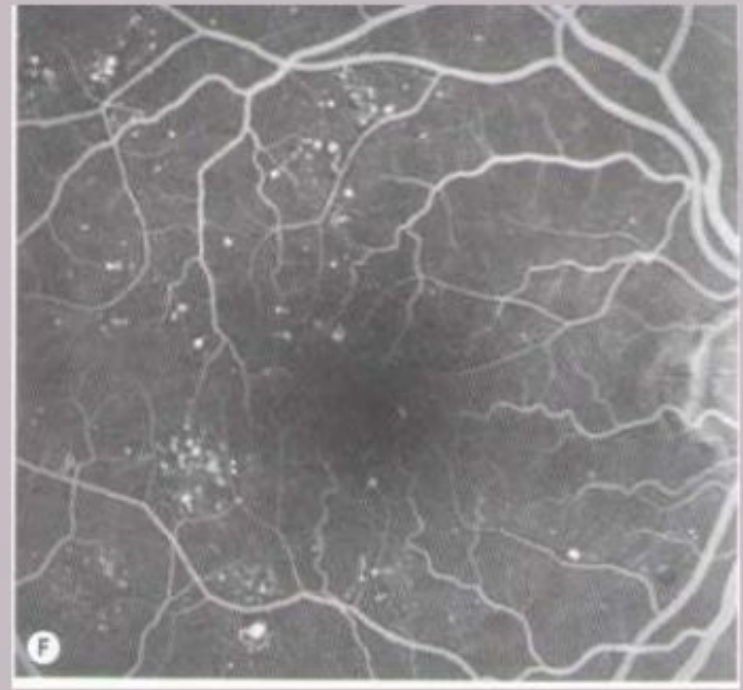
- **Nonproliferative stage**
  - **Preproliferative stage**
  - **Proliferative stage**
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# Nonproliferative stage

- microaneurysms;
- hemorrhages;
- macular edema;
- exudates.

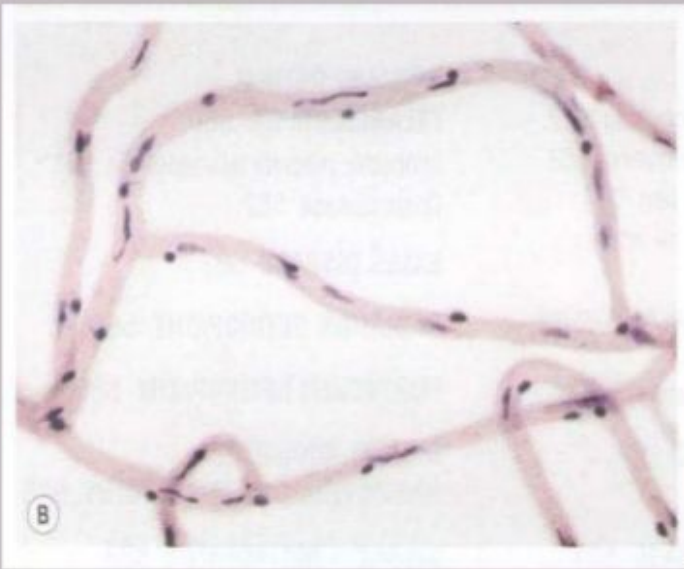
# Nonproliferative stage





## MICRO ANEURYSMS

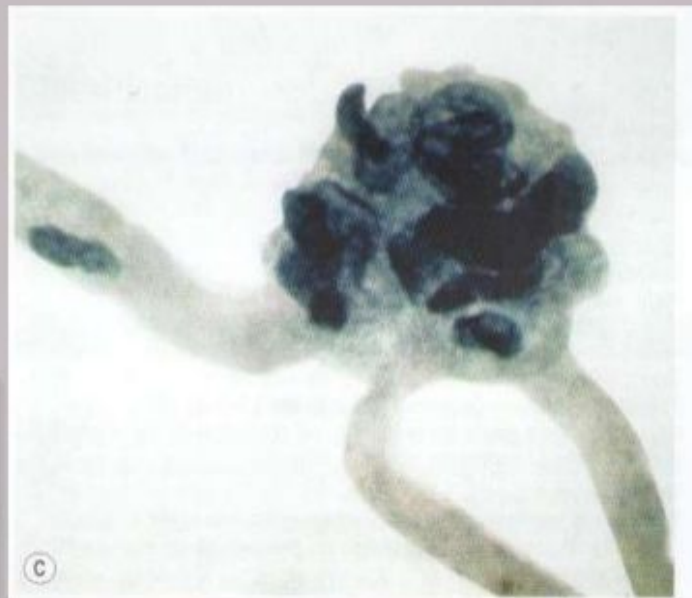




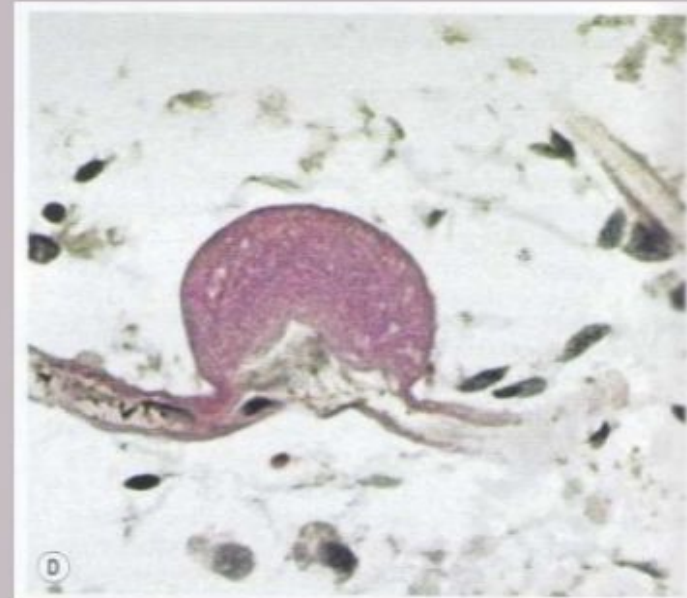
**NORMAL CAPILLARIES**



**PERICYTE LOSS**

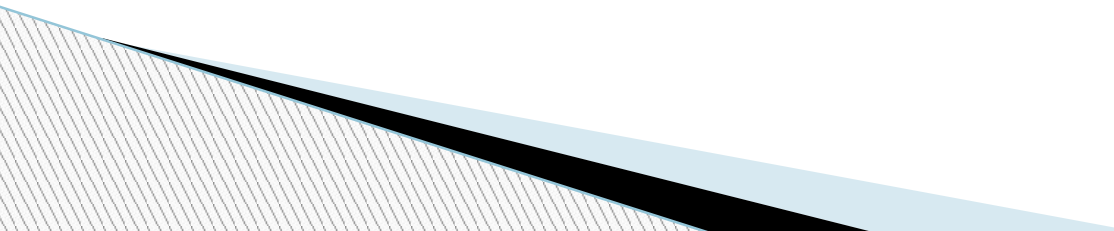


**MICRO ANEURYSM**



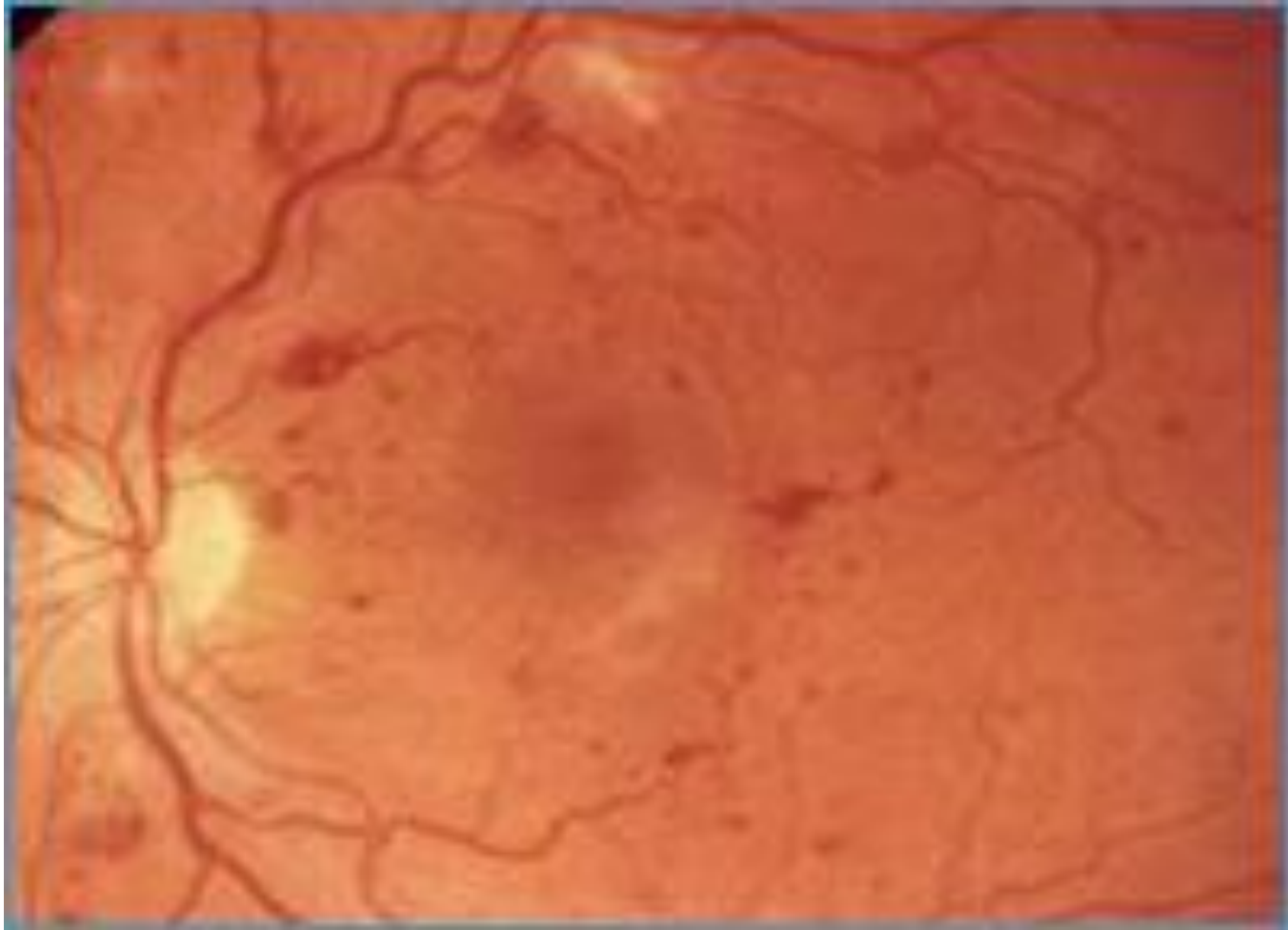
**THROMBOSED  
MICRO ANEURYSM**

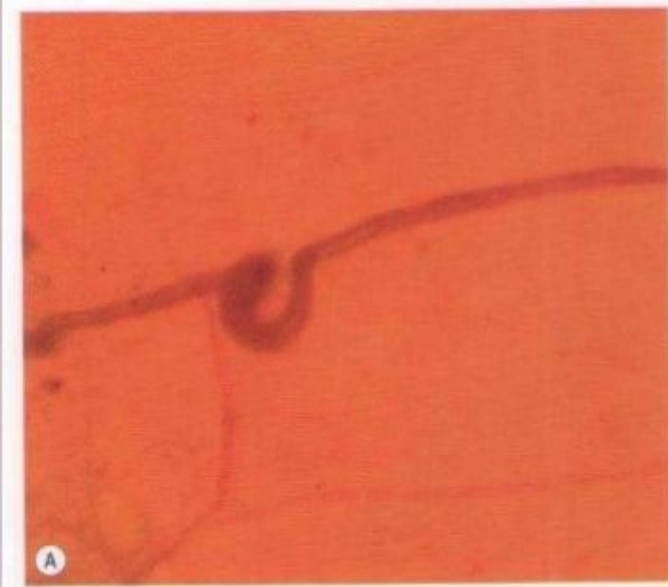
# Preproliferative stage

- venous changes (venous loops, venous segmentation, venous beading);
  - large amount of hard exudates;
  - large amount of hemorrhages;
  - ischemic zones of a retina.
- 

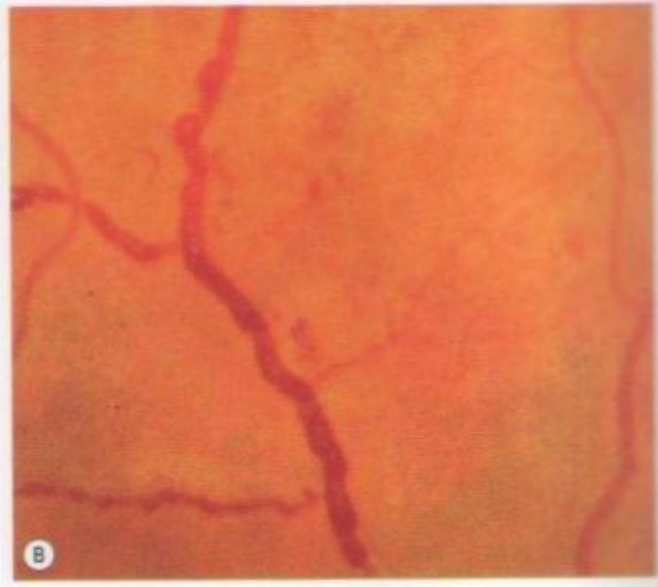


# Preproliferative stage

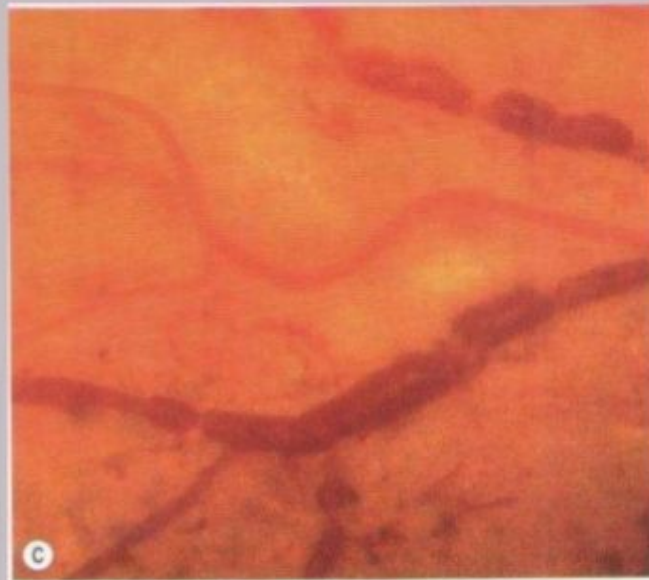




**Venous Loop**



**Venous Beading**



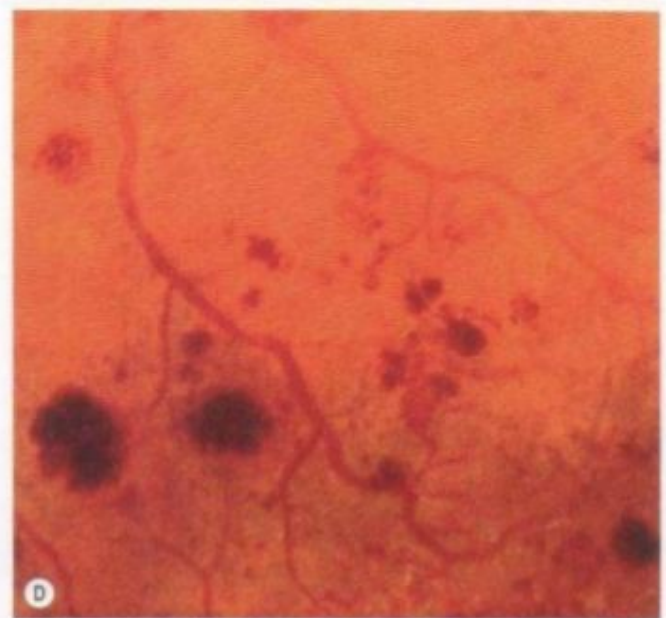
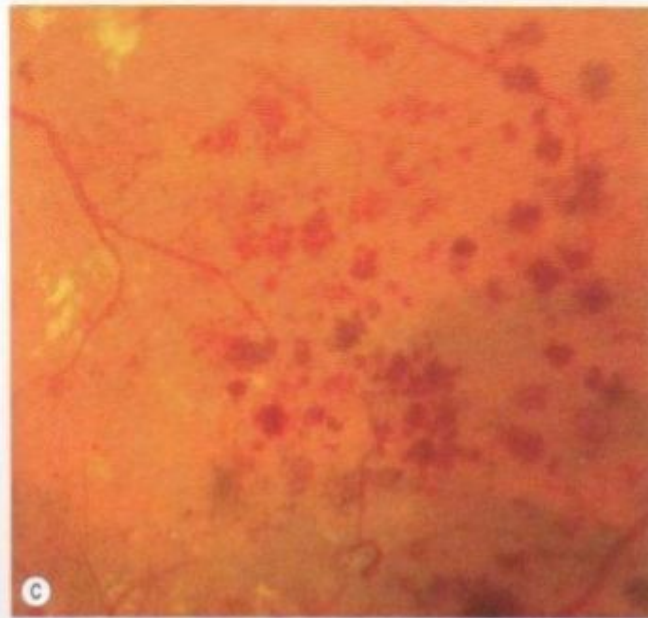
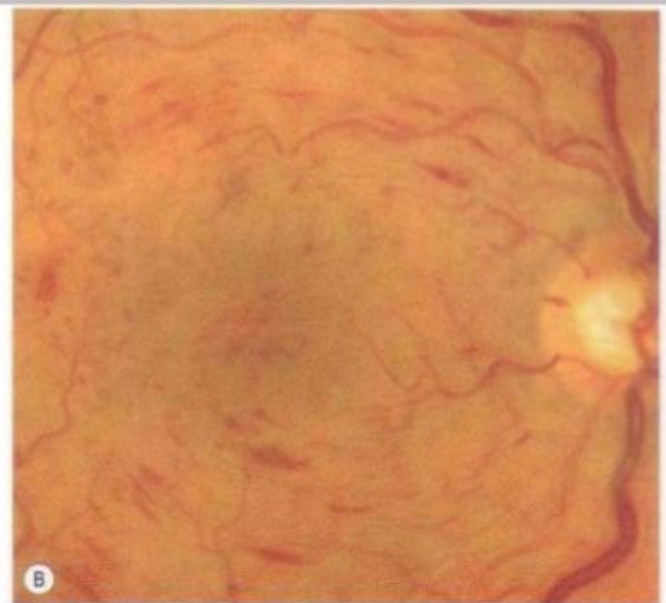
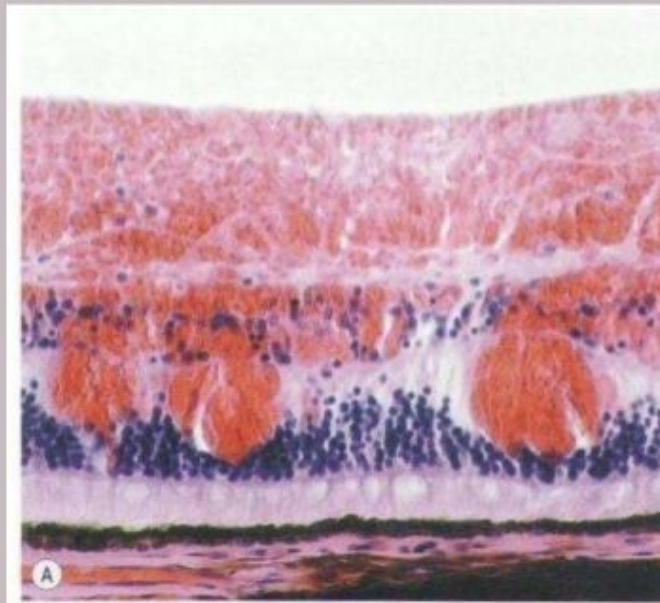
**Venous Segmentation**



**Retinal arteriole obliteration**



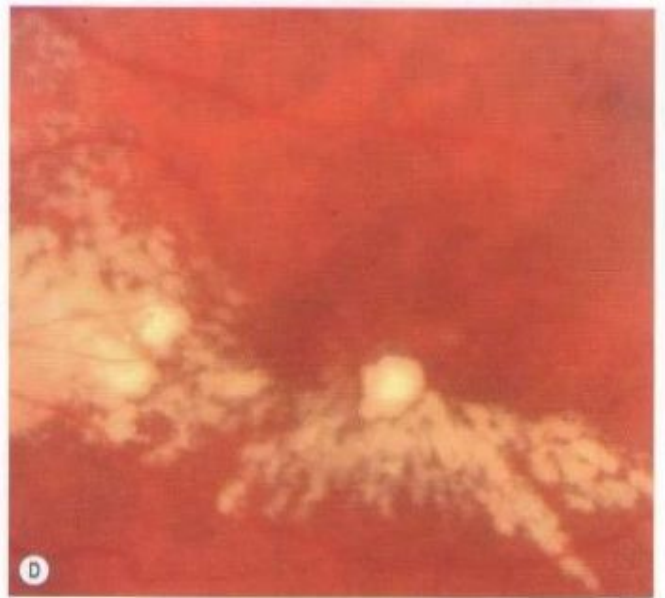
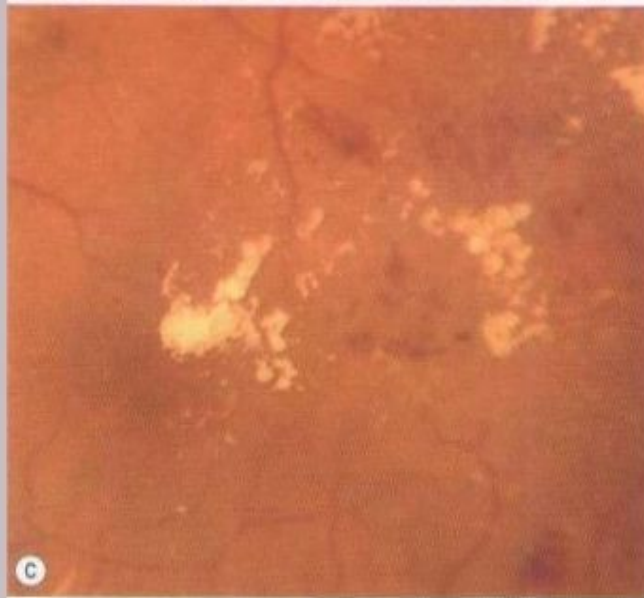
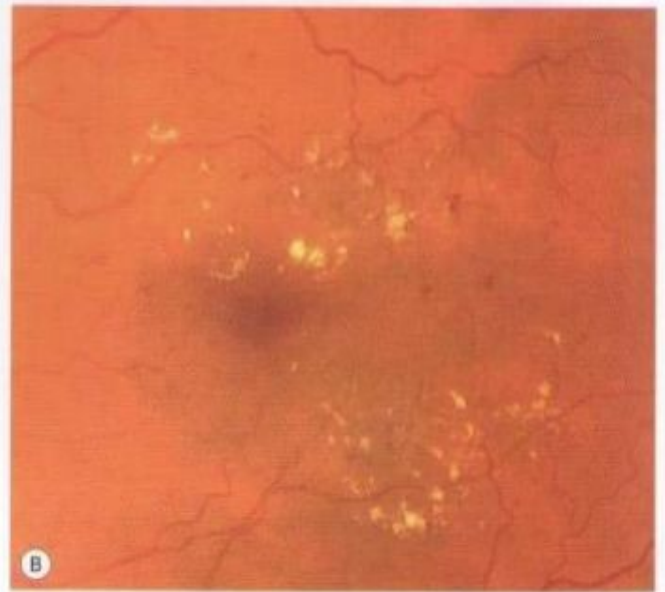
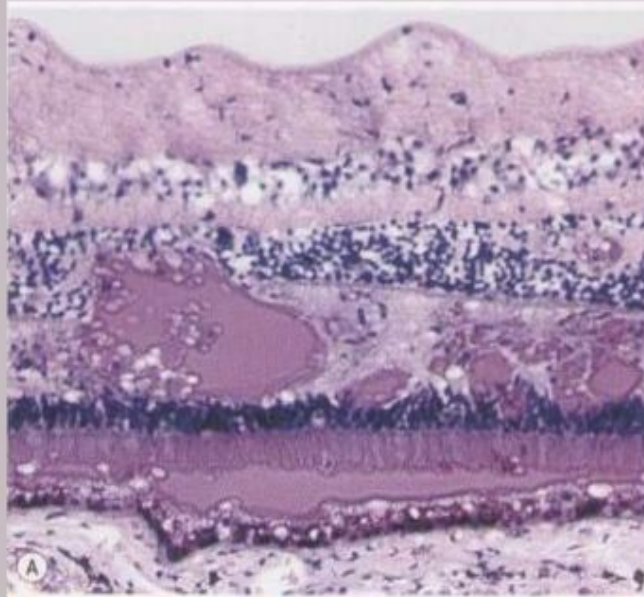
# INTRARETINAL HEMORRHAGES



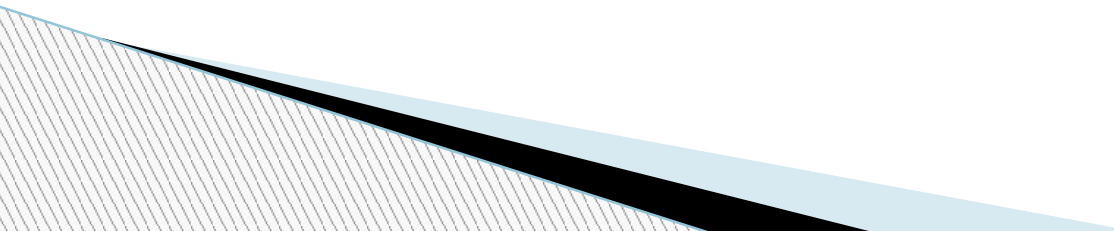
**Fig. 13.5** Retinal haemorrhages. **(A)** Histology shows blood lying diffusely in the retinal nerve fibre and ganglion cell layers and as globules in the outer layers; **(B)** retinal nerve fibre layer haemorrhages; **(C)** deep dot and blot haemorrhages; **(D)** deep dark haemorrhages



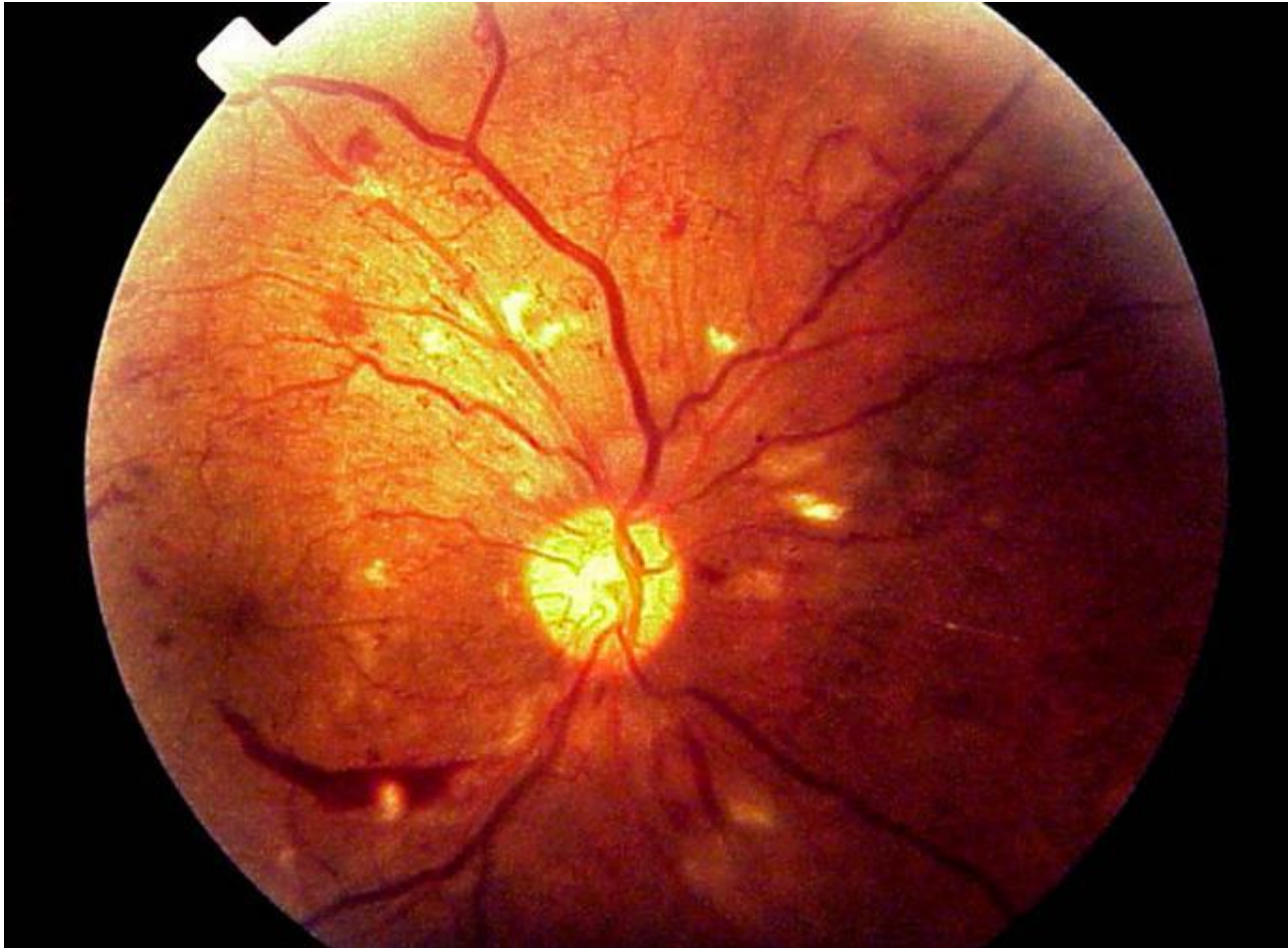
**EXUDATES**  
**(HARD)**



# Proliferative stage

- hemorrhages in a vitreous;
  - neovascularization;
  - neovascular glaucoma;
  - retinal detachment.
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# Proliferative stage



# PROLIFERATIVE DR

NEO  
VASCULARIZATION  
: DISC

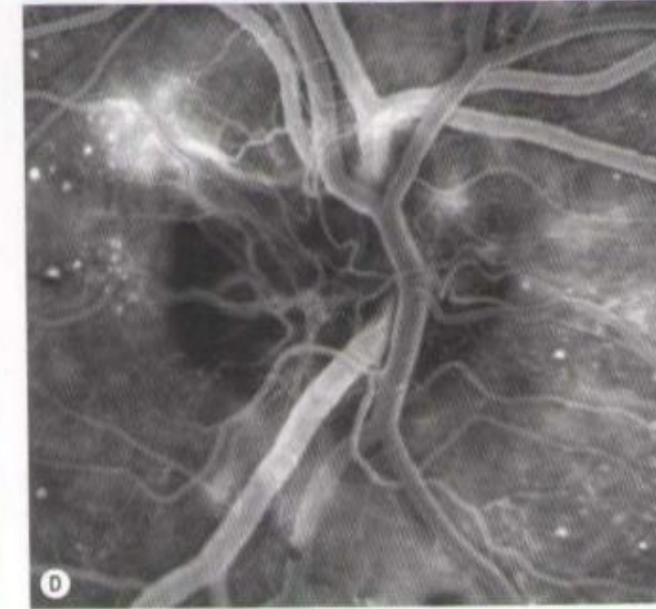
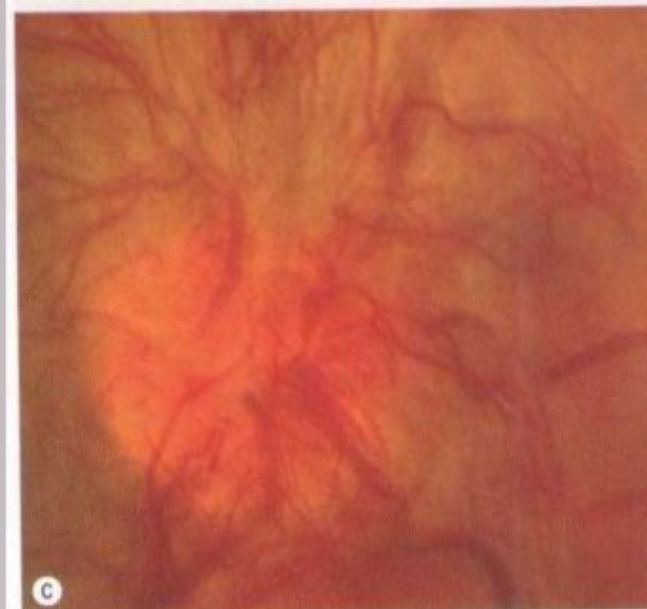


Fig. 13.16 Disc new vessels. (A) Mild; (B) severe; (C) very severe; (D) FA early phase highlights the vessels

A close-up photograph of a human eye. The iris is a vibrant rainbow color, with segments of red, orange, yellow, green, cyan, blue, and purple. The pupil is black and the sclera is white. The eye is surrounded by dark eyelashes and skin.

**Thank you for your  
attention**

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