

SYNOVIAL FLUID

A.C.O.I. Board Review 2018

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OBJECTIVES

- Review the nomenclature and classification system for synovial fluid analysis
 - Review the classic classification system for synovial fluid
 - learn the common diseases for each class
- Learn the appearance of normal and common abnormalities in synovial fluid
 - Differentiate gout crystals in synovial fluid
 - Identify various crystals and inclusions in synovial fluid
- Learn the basic and some of the specialized tests which can be performed on Synovial Fluid

COMPONENTS OF SYNOVIAL FLUID ANALYSIS

Standard Tests

- Gross appearance
- Volume
- Cell count
- Polarized light microscopy
- Viscosity
- Gram stain
- Culture and Sensitivity

Specialized tests

- Alizarin red or Von Kossa black stain
- Cytology
- X-ray diffraction
- Mucin Clot
- Viscosity
- Glucose
- NAAT (nucleic acid amplification test)
- PCR (polymerase Chain Reaction)

SYNOVIAL FLUID

- Group I Noninflammatory
- Group II Inflammatory
- Group III Septic
- Group IV Hemorrhagic

SYNOVIAL FLUID

■ Group I

- Osteoarthritis
- Thyroid
- Amyloid
- Osteonecrosis

■ Group II

- Rheumatoid
- Psoriatic
- Crystal disease
- Reiters/Reactive Arthritis
- Enteropathic
- Bechets

■ Group III

- Infection

■ Group IV

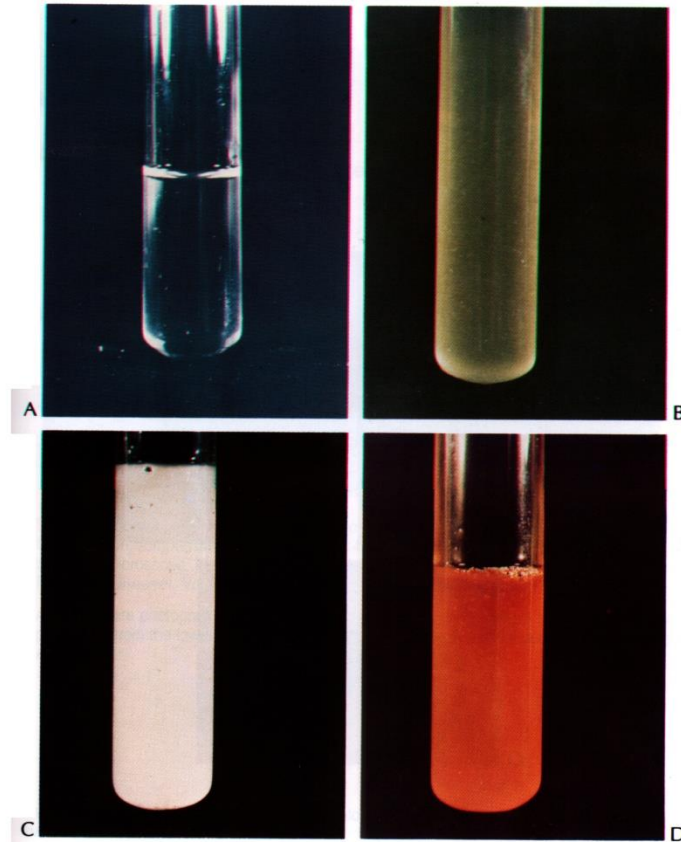
- Trauma
- Bleeding disorders
- Villonodular Synovitis

SYNOVIAL FLUID

	Normal	Group I	Group II	Group III
Volume	Low	Low	High	High
Viscosity	High	High	Low	Variable
Color	Clear	Clear/Y	Yellow	Variable
Clarity	Trans.	Trans.	Cloudy	Opaque
Mucin Clot	Firm	Firm	Friable	Friable
WBC	200	200	2-100,000	50-100,000
Culture	Neg	Neg.	Neg.	Variable

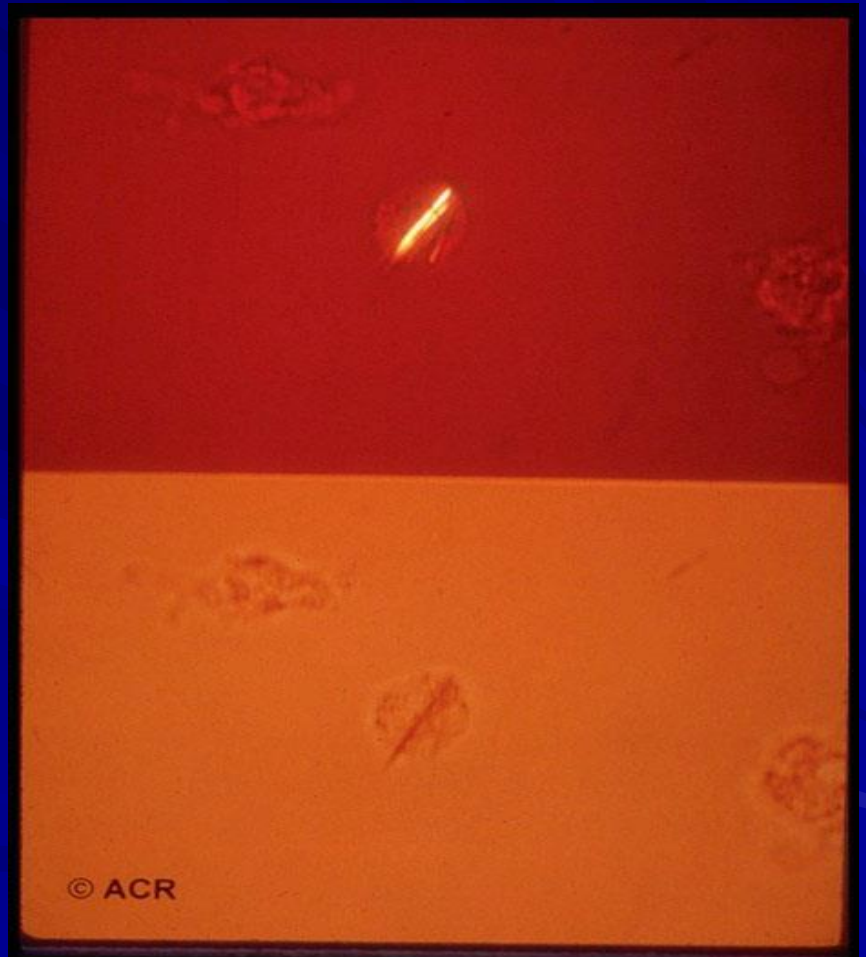
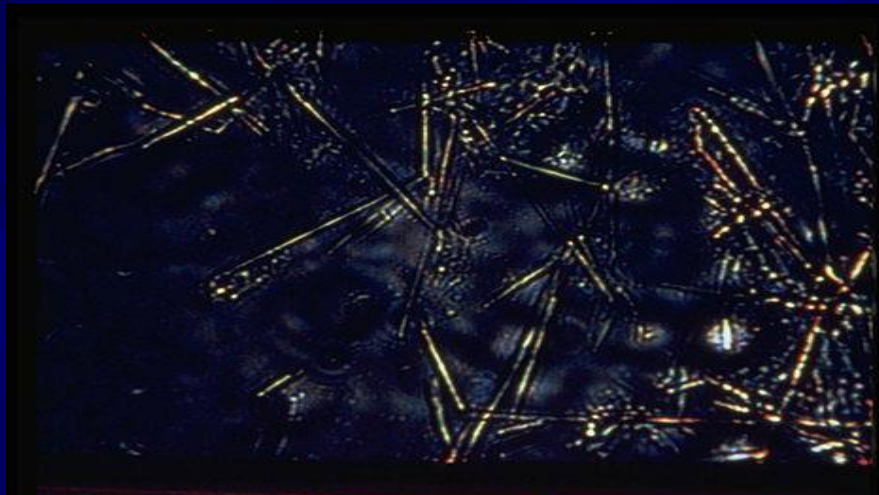
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Plate 1.

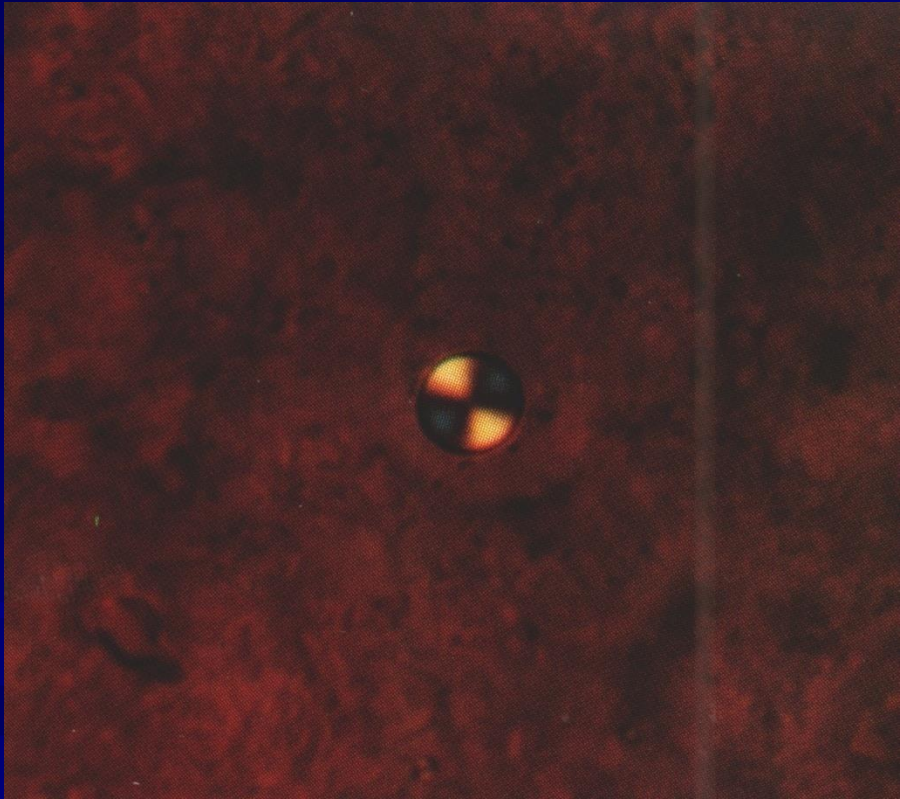


Color: A, Normal; B, Group I (noninflammatory) and Group II (inflammatory); C, Group III (septic); D, Group IV (hemorrhagic).

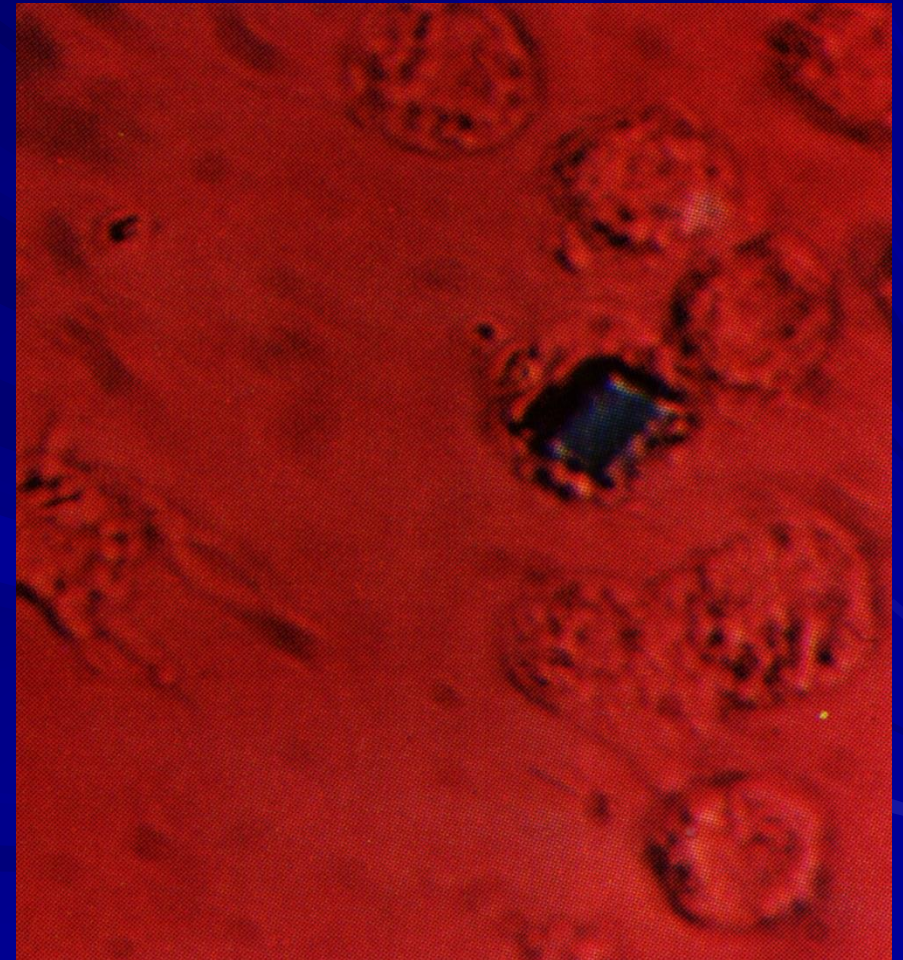
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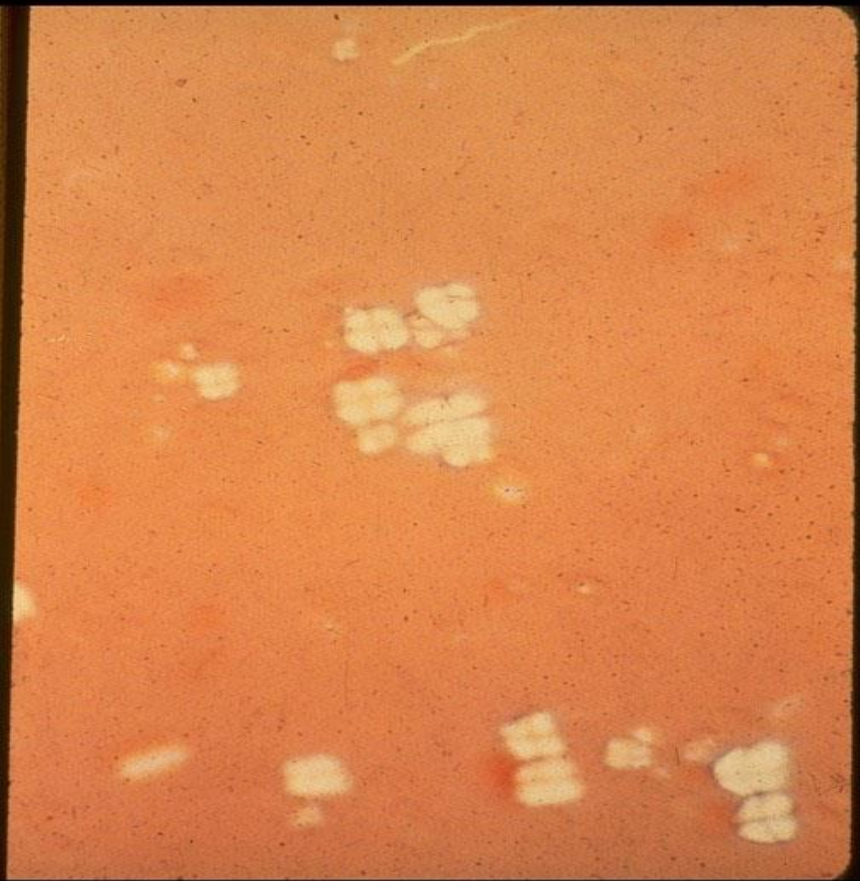
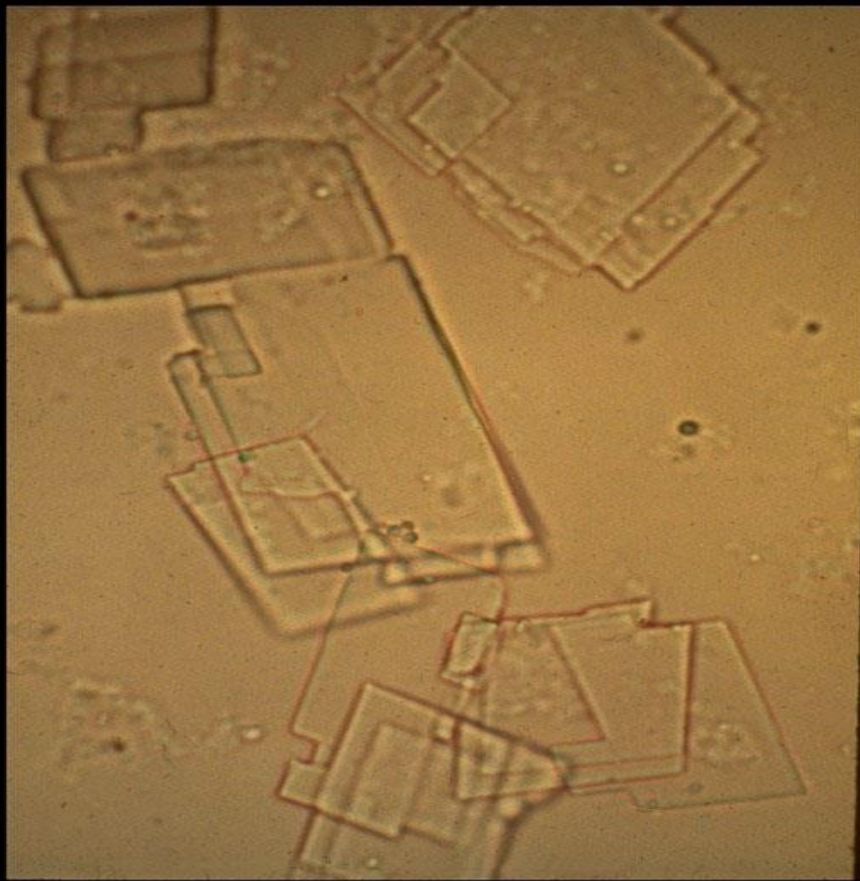
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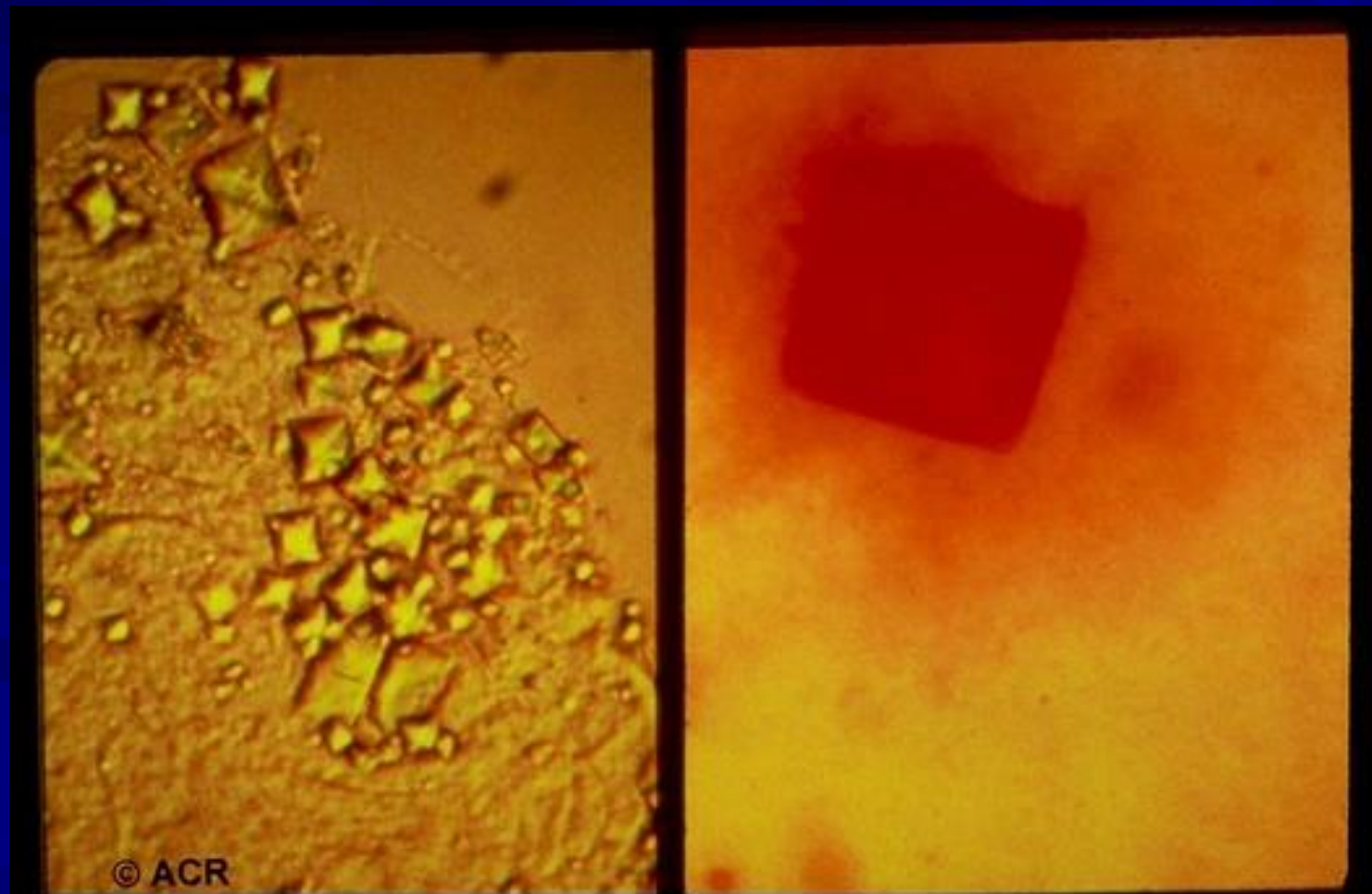
■ CHOLESTEROL

LIPID

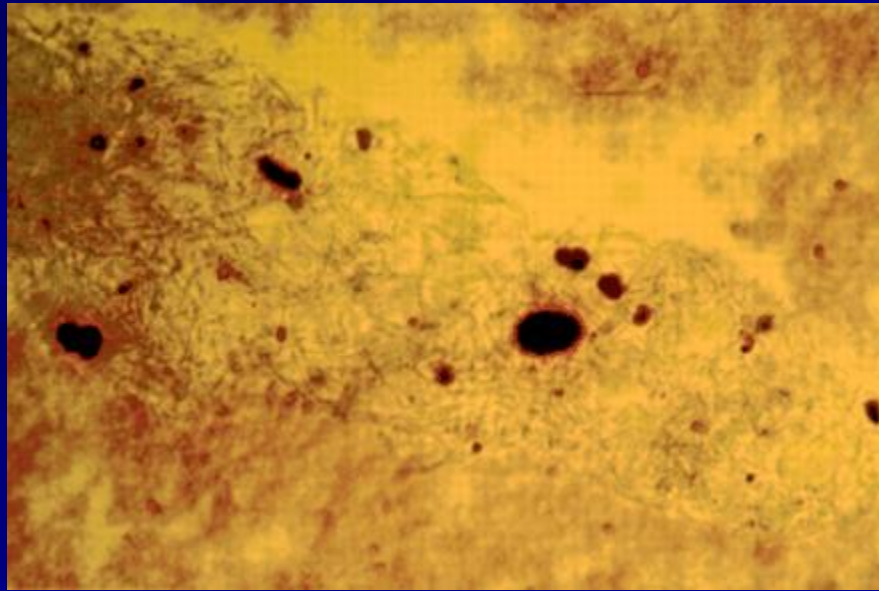


CALCIUM OXALATE

- Light Microscopy Alizarin Red



Calcium Apatite Crystals



STERIOD CRYSTALS



OCHRONOSIS



Contact Information

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