

Case presentation

Mahmoud Aboudaif

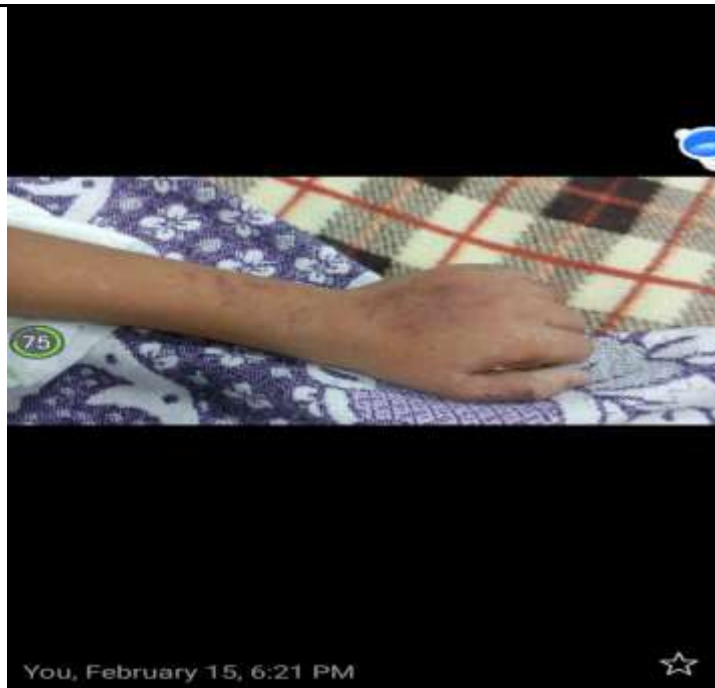
Ass lecturer of pediatric cardiology

Cairo university

HISTORY

- A male patient Kareem Mohammed Shalby, 11 years old, the 3rd child of 2nd degree consanguineous marriage, born and live in kafr-elshyekh.
- Previously diagnosed as a case of **rheumatic** aortic valve disease 3 years ago and was on long acting penicillin for 2 years, then **stopped** after adenotonsillectomy 1 year ago.

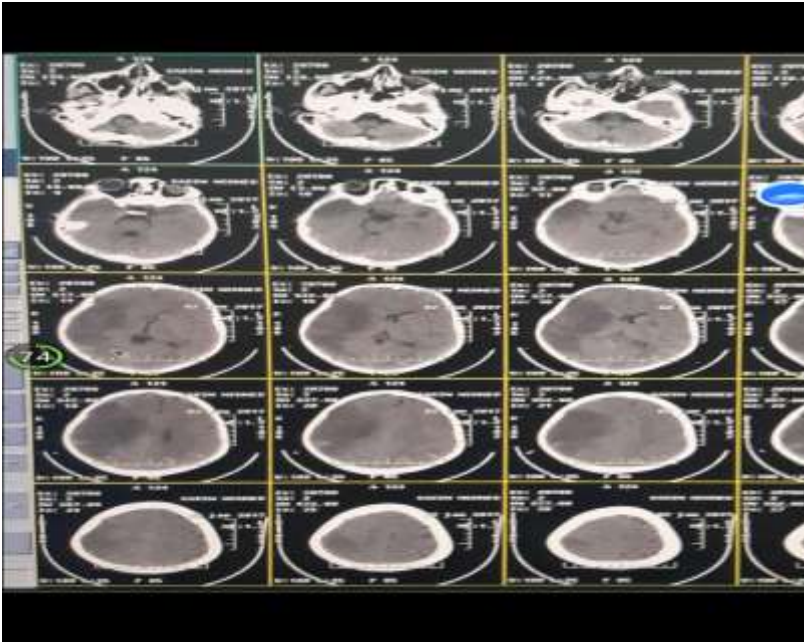
- He came to our casualty by **DCL** after 10 days of fever.
- On admission the patient appeared well built with average weight and height for age, he was disturbed with **GCS 10/15**, with normal muscle tone and reflexes. His pupillary reaction was **unequal** on both sides with sluggish reaction to light.
- 12 hours later the patient developed **reddish skin eruption** together with **dark colored urine**.
- His examination apart from the previous finding was unremarkable.

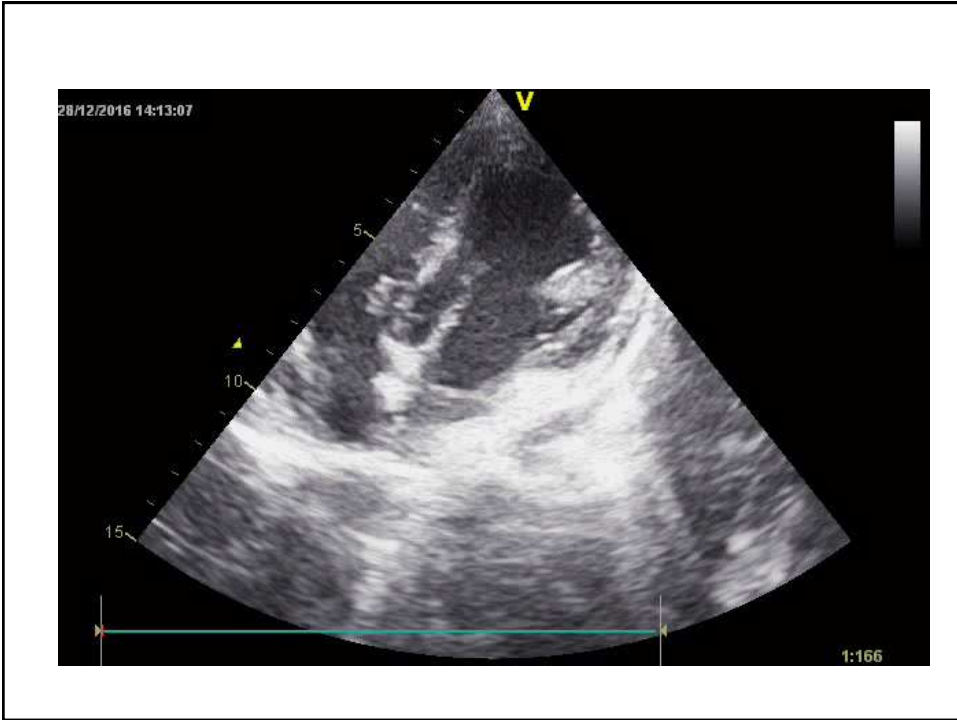




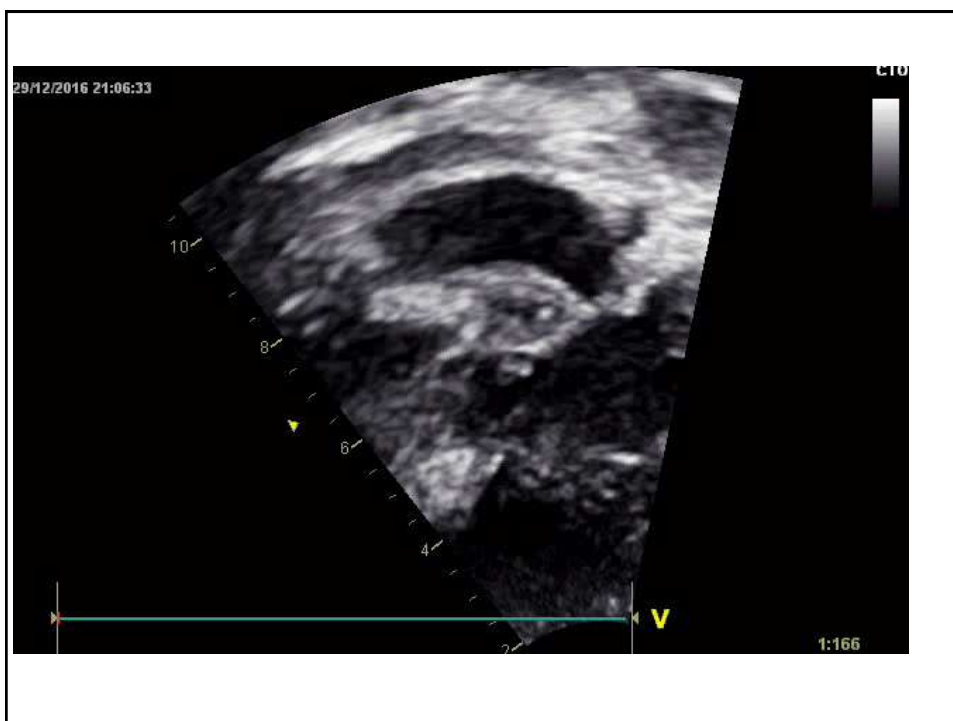
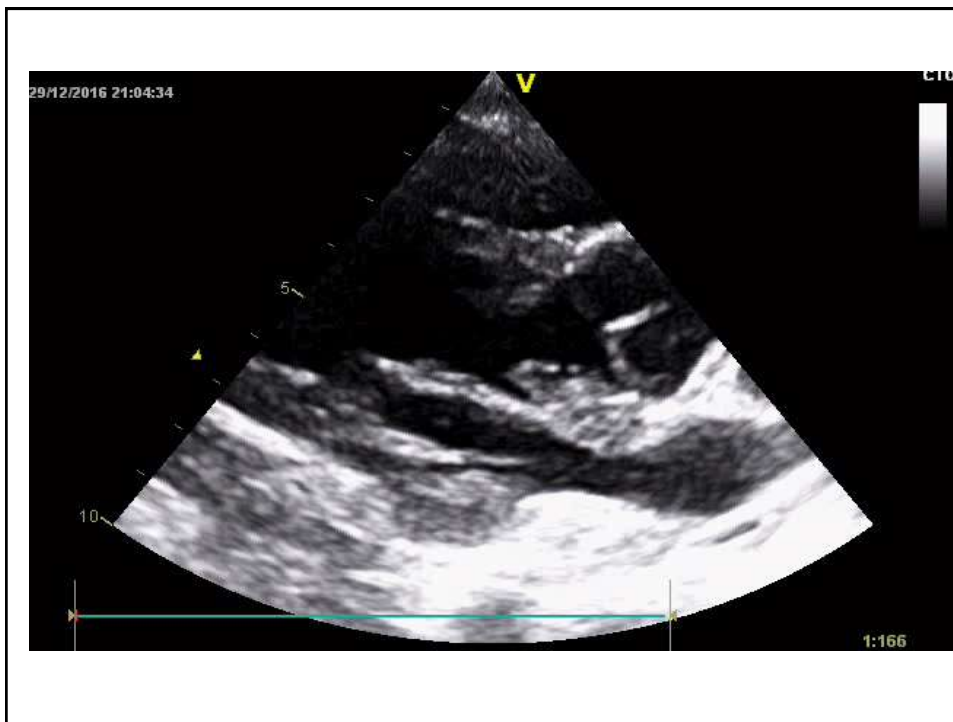
- **Many investigations had been performed revealed the following:**

- 1- Persistent leukocytosis and positive CRP
- 2- two of three serial blood cultures were **MRSA**
- 3- evidence of **nephritis** in urine analysis
- 4-CT brain revealed pareito-temporal **infarction**.
- 5-Fundus EX revealed multiple bilateral **Roth's spots** and punctate retinal hemorrhage.
- 6-Echo was done serially and revealed subaortic **vegetation** that complicated by sub aortic endocardial **abscess**













- All through his course in the ICU multiple complications were observed such as:
 - Bouts of **atrial tachycardia** that necessitates the usage of IV amiodaron for 10 days.
 - Hospital acquired **pneumonia** that was resistant to medical treatment and physiotherapy that necessitates → mechanical **ventilator** for 2 days.
 - **GIT hemorrhage** that rendered him NPO
 - **Sepsis** with MOS affection
- Unfortunately The patient died after 18 days in the ICU

IMPORTANT POINTS

Rheumatic fever

Revision of the Jones Criteria for the Diagnosis of Acute Rheumatic Fever in the Era of Doppler Echocardiography A Scientific Statement From the American Heart Association

Endorsed by the World Heart Federation

Michael H. Gewitz, MD, FAHA, Co-Chair; Robert S. Baltimore, MD, Co-Chair;
Lloyd Y. Tani, MD, FAHA; Craig A. Sable, MD, FAHA; Stanford T. Shulman, MD;
Jonathan Carapetis, MBBS; Bo Remenyi, MBBS; Kathryn A. Taubert, PhD, FAHA;
Ann P. Bolger, MD, FAHA; Lee Beerman, MD; Bongani M. Mayosi, MChB; Andrea Beaton, MD;
Natesa G. Pandian, MD; Edward L. Kaplan, MD, FAHA; on behalf of the American Heart
Association Committee on Rheumatic Fever, Endocarditis, and Kawasaki Disease
of the Council on Cardiovascular Disease in the Young

Background—Acute rheumatic fever remains a serious healthcare concern for the majority of the world's population despite its decline in incidence in Europe and North America. The goal of this statement was to review the historic Jones criteria used to diagnose acute rheumatic fever in the context of the current epidemiology of the disease and to update those criteria to also take into account recent evidence supporting the use of Doppler echocardiography in the diagnosis of carditis as a major manifestation of acute rheumatic fever.

Methods and Results—To achieve this goal, the American Heart Association's Council on Cardiovascular Disease in the Young and its Rheumatic Fever, Endocarditis, and Kawasaki Disease Committee organized a writing group to comprehensively review and evaluate the impact of population-specific differences in acute rheumatic fever presentation and changes in presentation that can result from the now worldwide availability of nonsteroidal anti-inflammatory drugs. In addition, a methodological assessment of the numerous published studies that support the use of Doppler echocardiography as a means to diagnose cardiac involvement in acute rheumatic fever, even when overt clinical findings are not apparent, was undertaken to determine the evidence basis for defining subclinical carditis and including it as a major criterion of the Jones criteria. This effort has resulted in the first substantial revision to the Jones criteria by the American Heart Association since 1992 and the first application of the Classification of Recommendations and Levels of Evidence categories developed by the American College of Cardiology/American Heart Association to the Jones criteria.

Conclusions—This revision of the Jones criteria now brings them into closer alignment with other international guidelines for the diagnosis of acute rheumatic fever by defining high-risk populations, recognizing variability in clinical presentation in these high-risk populations, and including Doppler echocardiography as a tool to diagnose cardiac involvement. (*Circulation*. 2015;131:000-000. DOI: 10.1161/CTR.0000000000000205.)

It is reasonable to consider individuals to be at low risk for ARF if they come from a setting or population known to experience low rates of ARF or RHD (*Class IIa; Level of Evidence C*).

low risk

- ARF incidence <2 per 100 000 school-aged children (usually 5–14 years old) per year
- prevalence of RHD of ≤ 1 per 1000 population per year (*Class IIa; Level of Evidence C*).

moderate to high risk

- Children not clearly from a low-risk population (*Class I; Level of Evidence C*).

B. Major criteria

	Low-risk populations	Moderate- and high-risk populations
Carditis	Clinical and/or subclinical	Clinical and/or subclinical
Arthritis	Polyarthritis only	Monoarthritis polyarthritis Polyarthralgia
Chorea	+	+
Erythema marginatum	+	+
Subcutaneous nodules	+	+

C. Minor criteria

	Low-risk populations	Moderate- and high-risk populations
arthralgia	Polyarthralgia	Monoarthralgia
Fever	$\geq 38.5^{\circ}\text{C}$	$\geq 38^{\circ}\text{C}$
Inflammatory markers	ESR ≥ 60 mm in the first hour and/or CRP ≥ 3.0 mg/dL	ESR ≥ 30 mm/h and/or CRP ≥ 3.0 mg/dL
PR interval unless carditis is a major criterion	Prolonged PR	Prolonged PR

Revised Jones Criteria

Initial ARF

- 2 Major manifestations **or**
- 1 major plus 2 minor manifestations

Recurrent ARF

- 2 Major or
- 1 major and 2 minor or
- 3 minor

IN EGYPT

Med. J. Cairo Univ., Vol 81, No. 1, March: 139-144, 2013

www.medicaljournalofcairouniversity.com

Prevalence of Rheumatic Valvular Heart Disease Among Egyptian School Children: An Echocardiographic Screening

WAFAA EL-AROUSSY, MD.1; NASHWA EL-HAGRACY, MD.2; HOSSAM FAWZY, MD.3;
SALAH ZAHER, MD.4; NASSER TAHA, MD.5 and SALAH MOUSTAFA, MD.6

The Departments of Cardiology, Cairo University¹, MUST University², National Heart Institute³, Pediatric Medicine, Alexandria University⁴, Cardiology, Minia University⁵ and Medical Study, Postgraduate Childhood Study, Ain-Shams University⁶

- **Results:** A total of **48930** school children in the **period between Sept 2009 to May 2011**. , age ranged between 6 and 18 years, An abnormal cardiac examination or history suggestive of rheumatic affection was reported in 2712 students, only 1603 had an adequately imaged transthoracic echocardiography fulfilling the protocol.
- Definite rheumatic valvular disease was documented in only 35 (2.2%), and probable affection in 107 (6.6%) of the total examined sample who underwent echocardiographic examination (n=1603). The prevalence rate of rheumatic valvular heart disease is **0.07% (7 in 10,000 of examined Egyptian)**

Secondary prevention

PENICILLIN (WHO guidelines)

- Secondary prevention is required to prevent additional streptococcal infections and is the critical step in management of ARF.
- Patients with a history of rheumatic fever are at a high risk of recurrent ARF, which may further the cardiac damage. The exact duration of chronic antimicrobial prophylaxis remains controversial.

Joseph N et al., 2013 and Gerber
MA et al., 2009

FOR HOW LONG

1-Antibiotic treatment for a **minimum of 10 years** after the latest episode; prophylaxis is required until the patient is aged at least **40-45 years** and is **often continued for life**.

Rheumatic
fever

carditis

clinically
significant
residual
heart
disease

FOR HOW LONG

2-Antibiotic treatment treatment for **10 years** or until age **25 years** (whichever is longer)..

Rheumatic
fever

carditis

No residual
heart disease
aside from
mild mitral
regurgitation

FOR HOW LONG

3- Antibiotic treatment for **5** years or until the patient is aged **18-21** years (whichever is longer)

Rheumatic fever

No
carditis

No
residual heart disease aside from mild mitral regurgitation

Endocardial abscesses

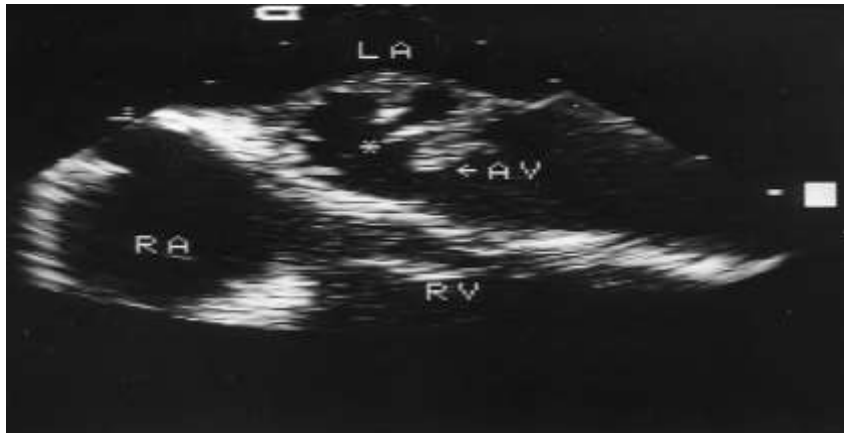
Endocardial abscesses

- The incidence of endocardial abscesses in adults is reported to be »30%–40% with native aortic valve infective endocarditis and 60% with prosthetic valve endocarditis. **The true incidence in children is not known; however, it is presumably rare**, since only 15 cases have been reported in the past 20 years. The most common valve affected is the aortic valve, which is in agreement with our observation in children

Endocardial Abscesses in Children: Case Report and Review of the Literature

Falguni S. Shah,¹ Glenn Fennelly,¹
Jacqueline Weingarten-Aramis,² L. Yang,⁴
and Julie Glickstein¹

From the ¹Divisions of Pediatric Infectious Diseases, ²Pediatric Critical Care, and ³Pediatric Cardiology, Department of Pediatrics, and the ⁴Department of Pathology, Montefiore Medical Center, and the ⁵Division of Pediatric Infectious Diseases, Jacobi Medical Center, Albert Einstein College of Medicine, New York, New York



- Transesophageal echocardiogram, transverse plane, of a 14-year-old boy with an aortic root abscess. The asterisk marks the abscess cavity, measuring »1.8 cm. Note the vegetations on the aortic valve (AV). LA, left atrium; RA, right atrium; RV, right ventricle.
Falguni S. 1999;

Dental caries

It is reasonable to shift the disproportionately large focus on antibiotic prophylaxis to an emphasis on oral hygiene and prevention of oral disease (Class IIa; Level of Evidence B).

AHA Scientific Statement

Infective Endocarditis in Childhood: 2015 Update A Scientific Statement From the American Heart Association

Robert S. Baltimore, MD, Chair; Michael Gewitz, MD, FAHA, Vice Chair; Larry M. Baddour, MD, FAHA; Lee B. Beerman, MD; Mary Anne Jackson, MD; Peter R. Lockhart, DDS; Efrides Pahl, MD, FAHA; Gordon E. Selinger, MD; Sherman, MD; Rodney Willoughby, Jr, MD; on behalf of the American Heart Association Endocarditis, and Kawasaki Disease Committee of the Council on Cardiovascular and Stroke and the Council on Cardiovascular and Stroke Nursing

THANKS