• Identified mitral etiology of non-ejection systolic click
• “Syndrome” may be associated
• Causally related to mitral valve
“Barlow Syndrome”

- Frequently young women
- Chest pain
- Palpitations
- Anxiety
- Rare syncope and sudden death

- CAUSALLY RELATED TO BILLOWING MITRAL VALVE
“Barlow Valve”

- Bileaflet prolapse
- Elongated chordae
- Voluminous leaflet bodies
- Fissuring between scallops
Syndrome or Valve?

- “Barlow Syndrome”
- **Symptoms** causally related to the billowing, usually posterior, mitral valve leaflet

- “Barlow Valve”
- **Anatomical description** of a particular mitral valve pathology that is cumbersome to describe directly
• SA Army WWII with US 5th Army
• Witwatersrand University

• Johannesburg Hospital
• Baragwanath Hospital Soweto
• Importance Clinical Examination
• Rheumatic Heart Disease
• Ischemic Time Course Patterns
• Collaboration
Barlow’s direct role

- Barlow demonstrated mitral etiology of non-ejection systolic clicks (not pericardial)
- Apical late systolic murmurs represented mitral regurgitation
- Clinical Examination
  - Cineangiography
  - Phonocardiography
- “Syndrome” causally related to billowing mitral valve
Landmark Publications

- Am Heart J 1963;66:443-452

The significance of late systolic murmurs

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- British Heart J 1968;30:203-218

Late Systolic Murmurs and Non-Ejection ("Mid-Late") Systolic Clicks
An Analysis of 90 Patients

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Confusion in Terminology

- “Mitral valve prolapse”
- “Floppy mitral valve”
- “Billowing mitral leaflet syndrome”
- “Myxomatous mitral valve”
- “Degenerative mitral valve disease”

- Research difficult to interpret
- Spectrum of the same or differing processes?
Barlow’s Terminology - Anatomical

- A - Normal
- B - Billowing
- C - Prolapse
- D - Floppy
- E - Flail
- F - Annular Dilatation
Barlow’s Terminology - Functional

- PROLAPSE implies failure of leaflet edge apposition
- Results in mitral regurgitation
- ALWAYS ABNORMAL
- The description “mitral valve prolapse” is inappropriate when the valve is functionally normal (i.e., in the absence of mitral regurgitation)
Causes of Mitral Valve Prolapse

- A – Normal
- B – Primary billowing
- C – Papillary muscle dysfunction
- D – Asymmetric myocardial hypertrophy
- E – Chronic rheumatic mitral disease
Modified Technique for Mitral Repair Without Ring Annuloplasty

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Barlow and Surgery for Mitral Regurgitation

- **Cooperation** between surgeon and cardiologist essential for deciding on timing/type surgery
- Elucidate **precise mechanism** (e.g., ring annuloplasty would not repair prolapse from papillary muscle dysfunction)
Repair Techniques

- **a** - chordal shortening
- **b** - leaflet resection
- **c** - chordal transfer
- **d** - ring annuloplasty

**REQUIRE ACCURATE ANATOMICAL DESCRIPTIONS**
“Barlow Valve”

- Marked billowing of leaflets
- Fissuring between scallops
- Bilateral chordal elongation
- Annular dilatation
- Surgical challenge that is hard to describe anatomically
- Carpentier coined the term “Barlow Valve”
“My perspectives on this subject, widely and misleadingly incorrectly referred to as mitral valve prolapse, are clear. Fifty years ago I clarified the cause of apical systolic murmurs. I showed they reflect mitral regurgitation. It then became apparent that a hitherto undescribed entity existed. The mitral leaflets could billow and even become floppy. A leaflet, usually the posterior, could prolapse and advance to flail when the abnormality increased further.”
Barlow and the Syndrome

• Barlow – “entity of anatomical, surgical, cardiological and electrophysiologial conditions should be grouped under the umbrella term Degenerative Mitral Valve Disease”

• Barlow – “if the eponym Barlow’s Syndrome is used in the future, it is crucial it reflects the symptoms are causally related to the billowing posterior mitral valve leaflet”
Barlow and the Valve

• Barlow - “it is the **functional anatomy** of the mitral valve mechanism we attempt to assess by all invasive or non-invasive means.”

• Partly accurate to attribute the particular anomaly that is cumbersome to describe anatomically as “**Barlow Valve**”
Nelson Mandela
Mandela – “To John Barlow, outstanding surgeon”