The Process of Progress in Medicine, in Sports Medicine, and in Baseball Medicine

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I. History of medicine
   A. Characteristics of progressive contributors
      1. Scientists
      2. Strong clinicians
      3. Teachers
      4. Prolific writers
   B. Herodicus ~500 BC
      1. Diet and exercise
      2. Hippocrates’ teacher
   C. Hippocrates ~500 BC
      1. Culture believed in divine origin
      2. Hippocrates: if observe enough cases, can predict disease course
      3. Moved medicine from mysticism to evidence based practice
   D. Galen ~200 AD
      1. Experimented
      2. Dissected animals
      3. Predeterminism
      4. Teach
      5. Wrote 22 volumes in medicine
         a) Thought that was all there was to know
   E. Renaissance
      1. Pope Sixtus IV - 1482
         a) Papal Bull allowing bishops to determine if bodies could be dissected
      2. Vesalius ~1540
         a) Dissected human bodies
         b) Declared much of Galen’s work to be untrue
         c) “On the Workings of the Human Body”
      3. Paré ~1540
         a) Observed outcomes in ‘new’ vrs ‘old’ treatment for open wounds on the battlefield
      4. Morgagni ~1770
         a) Father of modern anatomical pathology
         b) Determined disease due to specific organs
         c) Brought an end to predeterminism
         d) Wrote a book with indexing of over 700 patient cases
II. Baseball medicine & epidemiology
   A. Confirms physiological limits and effects of pitching volume
   B. 1876-1883
      1. Pitched 70-98% of the games
      2. All 9 innings
      3. >100 games/season
   C. 1884-1891
      1. Overhand delivery
      2. 69 pitchers threw a season of 389+ innings
         a) 41% had last win within 3 years
      3. Alexander H.P. Leuf M.D.
         a) Wrote on the effects of ‘excessive functional activity’
   D. 1892 – Cyclones
      1. Concerned about pitching frequency
      2. Pitched 50-60 games, all innings
   E. 1893 – Baltimore Orioles Manager, Ned Hanlon
      1. Had 6 pitchers (other teams had 4)
      2. Following year, took the National League pennant
   F. 1893-1902
      1. 4 pitchers threw 425+ innings
         a) Last winning season shortly thereafter
   G. Foul ball rule
      1. Fouls were called as ‘strikes’
      2. Prior to this, could endlessly foul of the ball and tire the pitcher’s arm
   H. Cy Young
      1. Record tells of pitching volume and effects
      2. Key to longevity and success
         a) Large repertoire of pitches
         b) Late start in pro pitching
         c) Conditioning king
         d) Low pitch count

III. Youth today
   A. Overuse injuries are increasing
   B. Does volume of pitching play a role in this increase?

IV. Summary
   A. Progress leaders
      1. Scientists
      2. Strong clinicians
      3. Teachers
      4. Prolific writers
   B. "You can observe a lot just by watching" Yogi Berra
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