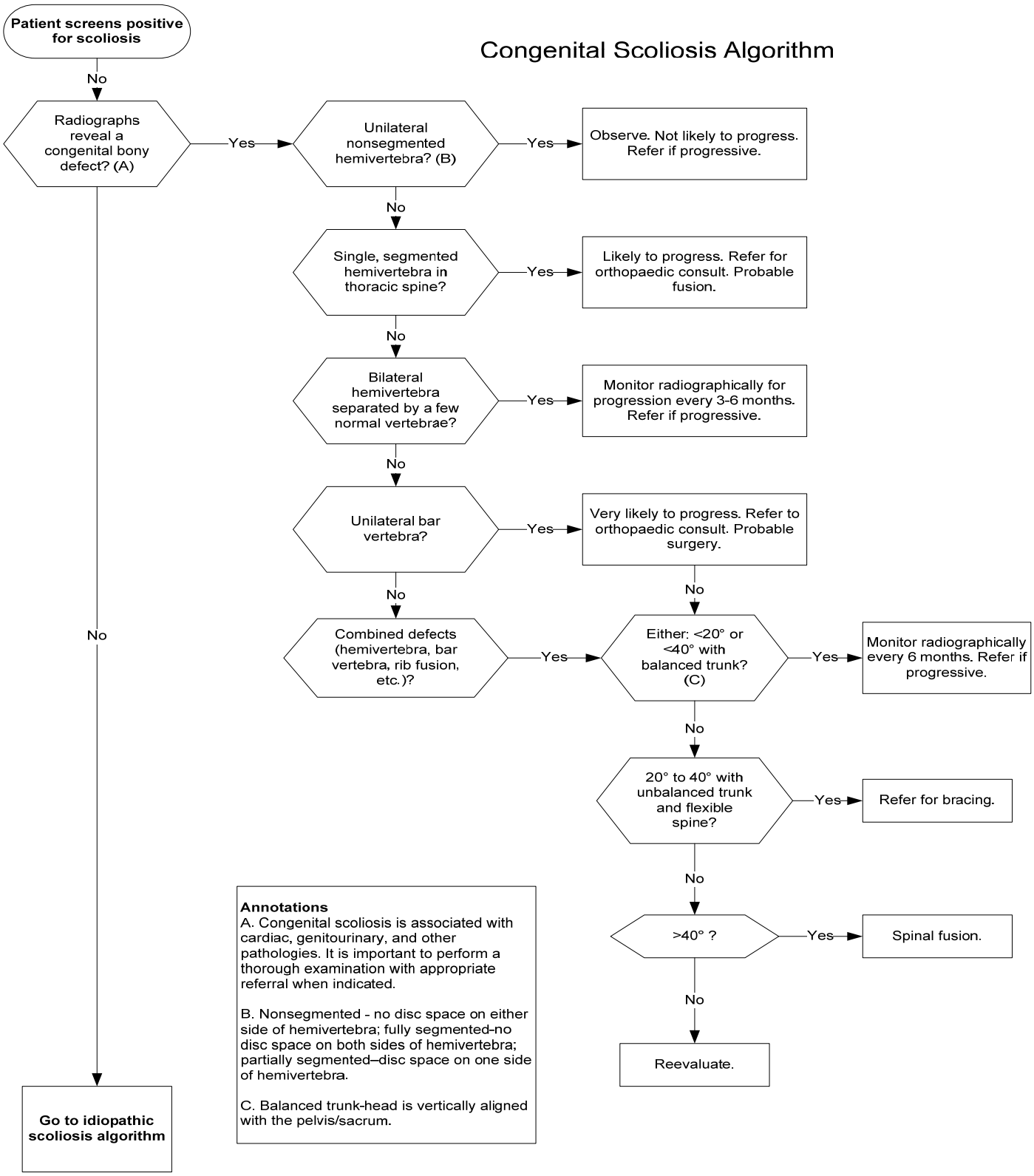
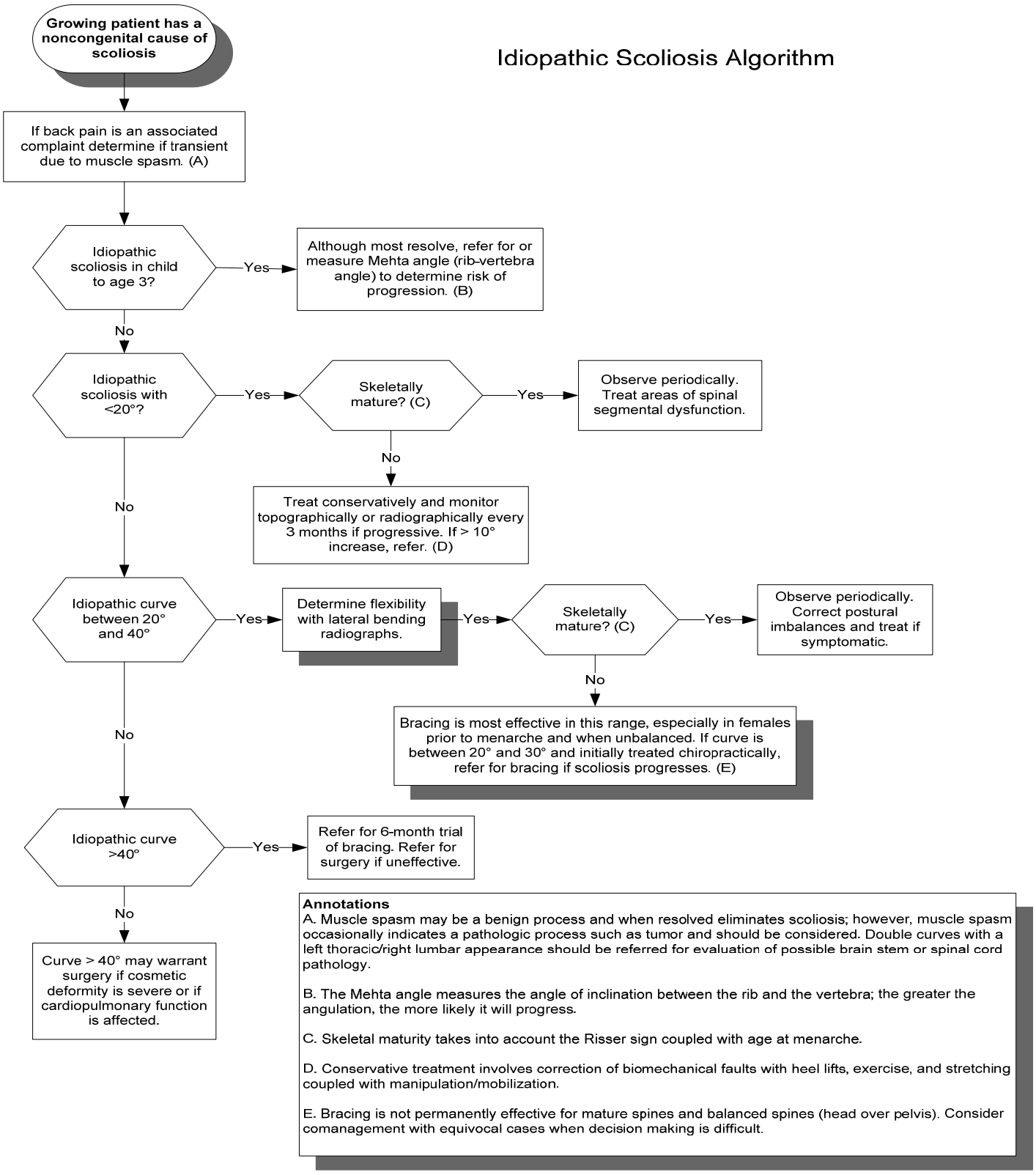
Chapter 2 – Diagnostic Algorithms

9
Scoliosis Algorithm


Congenital Scoliosis Algorithm
Patient screens positive for scoliosis
No
Radiographs reveal a congenital bony defect? (A)
Yes
Unilateral nonsegmented hemivertebra? (B)
Yes
Observe. Not likely to progress. Refer if progressive.
No
Single, segmented hemivertebra in thoracic spine?
Yes
Likely to progress. Refer for orthopaedic consult. Probable fusion.
No
Bilateral hemivertebra separated by a few normal vertebrae?
Yes
Monitor radiographically for progression every 3-6 months. Refer if progressive.
No
Unilateral bar vertebra?
Yes
Very likely to progress. Refer to orthopaedic consult. Probable surgery.
No
Combined defects (hemivertebra, bar vertebra, rib fusion, etc.)?
Yes
Either: <20° or <40° with balanced trunk? (C)
Yes
Monitor radiographically every 6 months. Refer if progressive.
No
20° to 40° with unbalanced trunk and flexible spine?
Yes
Refer for bracing.
No
>40° ?
Yes
Spinal fusion.
No
Reevaluate.
No
Go to idiopathic scoliosis algorithm
Annotations
A. Congenital scoliosis is associated with cardiac, genitourinary, and other pathologies. It is important to perform a thorough examination with appropriate referral when indicated.
B. Nonsegmented - no disc space on either side of hemivertebra; fully segmented-no disc space on both sides of hemivertebra; partially segmented–disc space on one side of hemivertebra.
C. Balanced trunk-head is vertically aligned with the pelvis/sacrum.

Idiopathic Scoliosis Algorithm



Annotations

A. Muscle spasm may be a benign process and when resolved eliminates scoliosis; however, muscle spasm occasionally indicates a pathologic process such as tumor and should be considered. Double curves with a left thoracic/right lumbar appearance should be referred for evaluation of possible brain stem or spinal cord pathology.

B. The Mehta angle measures the angle of inclination between the rib and the vertebra; the greater the angulation, the more likely it will progress.

C. Skeletal maturity takes into account the Risser sign coupled with age at menarche.

D. Conservative treatment involves correction of biomechanical faults with heel lifts, exercise, and stretching coupled with manipulation/mobilization.

E. Bracing is not permanently effective for mature spines and balanced spines (head over pelvis). Consider comanagement with equivocal cases when decision making is difficult.

Adult Scoliosis Algorithm

