Craniocervical junction and upper cervical spine abnormalities

Abnormalities in this region are seen in a number of conditions including: rheumatoid arthritis

traumatic & posttraumatic: including fractures of odontoid, occipital condyles...

ankylosing spondylitis: may result in fusion of the entire spine, which spares the occipitoatlantal and/or atlantoaxial joints, which can lead to instability there congenital conditions:

a) Chiari malformations

b) Klippel Feil syndrome

c) Down syndrome

d) atlantoaxial dislocation(AAD)

e) occipitalization of the atlas: seen in 40% of congenital AAD

f) Morquio syndrome (a mucopolysaccharidosis): atlantoaxial subluxation occurs due to hypoplasia of the odontoid process and joint laxity

5. neoplasms: metastatic or primary

6. infection

7. following surgical procedures of the skull base or cervical spine: e.g. transoral resection of the odontoid

Types of abnormalities

Abnormalities include:

1. basilar impression/invagination: as with Paget's disease

2. atlantooccipital dislocation

3. atlantoaxial dislocation

4. occipitalization of the atlas, or thin or deficient posterior arch of atlas

Treatment

Fractures of the occipital condyles, atlas, or axis are usually adequately treated with external immobilization; also see Occipital condyle fractures. Because traumatic occipitocervical dislocations

are usually fatal, optimal treatment is not well defined. Occipitalization of the atlas may be treated by creating an “artificial atlas” from the base of the occiput and wiring to that.

Indications and techniques are outlined in Atlantoaxial fusion (C1–2 arthrodesis)