# DEVELOPMENTAL DISTURBANCES OF JAWS & DENTAL ARCH

Dept.of Oral Pathology
& Microbiology

# PURPOSE STATEMENT

At the end of the lecture student should be able to

- Describe congenital developmental anomalies of Jaws and their effects

# LEARNING OBJECTIVES

| . N . | Learning Objectives | Dom ain | Level | Crite ria | Con dition |
|---|---|---|---|---|---|
| | Enumerate clinical features | Cogni tive | Must Know | All | |
| | Write classification | Cogni tive | Must Know | All | |
| | Write pathogenesis | Cogni tive | Must Know | All | |
| | Write radiographic | Cognitive | Must Know | All | |

# CONTENTS

- Agnathia
- Micrognathia
- Pierre robin syndrome
- Macrognathia
- Facial hemihypertrophy/hyperplasia
- Anatomic classification
- Parry romberg syndrome/hemiatrophy
- Angle's classification

# AGNATHIA

- A- Absence Gnathia- Jaw
- Absence of Maxilla/Mandible
- In Maxilla-
- Maxillary process/ Premaxilla
- In Mandible-
- More commonly missing Ramus
- Condyle
- If unilateral ramus missing- Deformed /absent ear (due to failure of migration of neural crest mesenchyme into maxillary prominence)

# MICROGNATHIA

- Micro – Small  Gnathia- Jaw
- Either jaws

1. True Micrognathia
2. Apparent Micrognathia

- True Micrognathia
  1. Congenital type
  2. Acquired type

- Congenital –

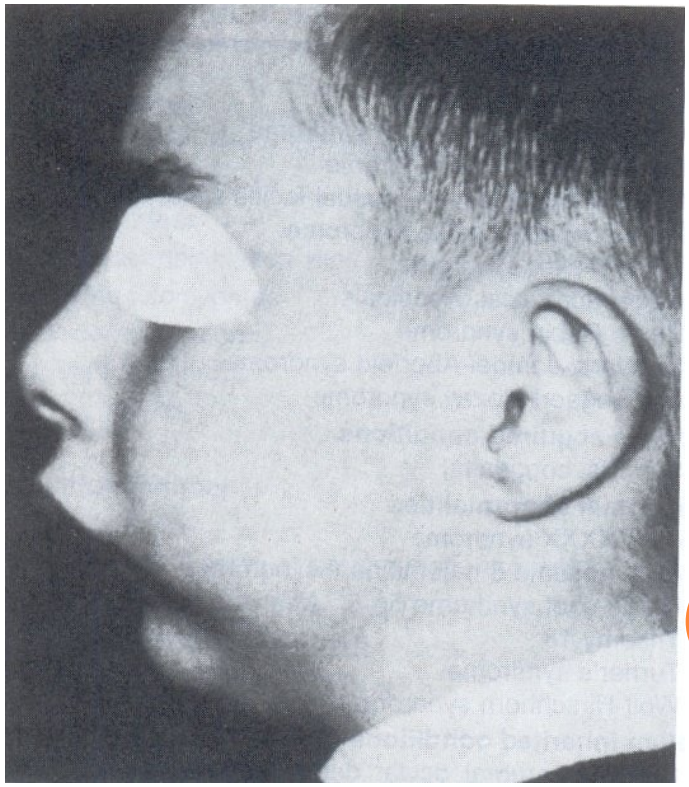
1. It is associated with Congenital heart disease & Pierre Robin syndrome
2. Maxillary micrognathia due to deficiency in premaxillary area
3. Retracted middle third of face
4. Etiology- mouth breathing

- Mandibular micrognathia may be due to posterior positioning of mandible, Steep mandibular angle, agenesis of condyle

- Acquired type is postnatal-
- Due to disturbance in TMJ region
- Ankylosis due to trauma or infection of mastoid

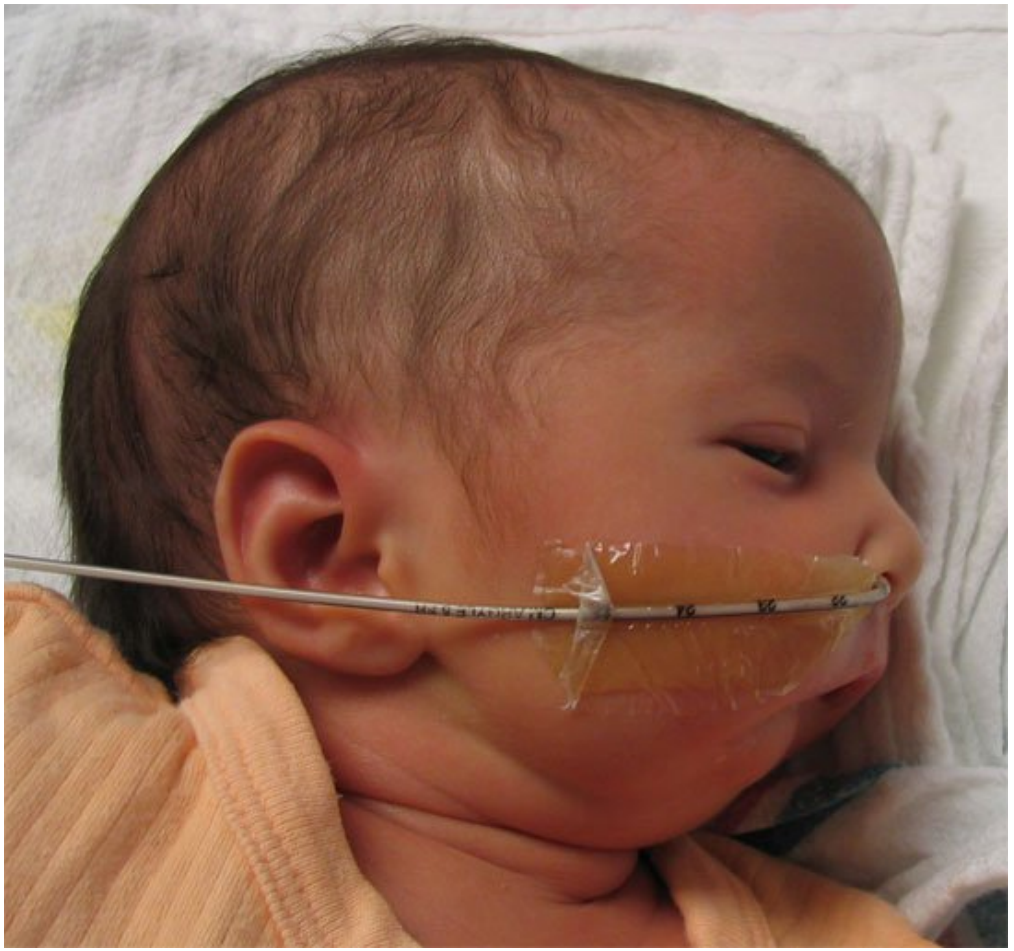
Clinical features

- Severe retrusion of chin
- Steep mandibular angle
- Deficient chin button



# Pierre Robin syndrome

- Cleft palate
- Micrognathia
- Glossoptosis
- Congenital heart defects
- Ocular anomalies
- Skeletal defects

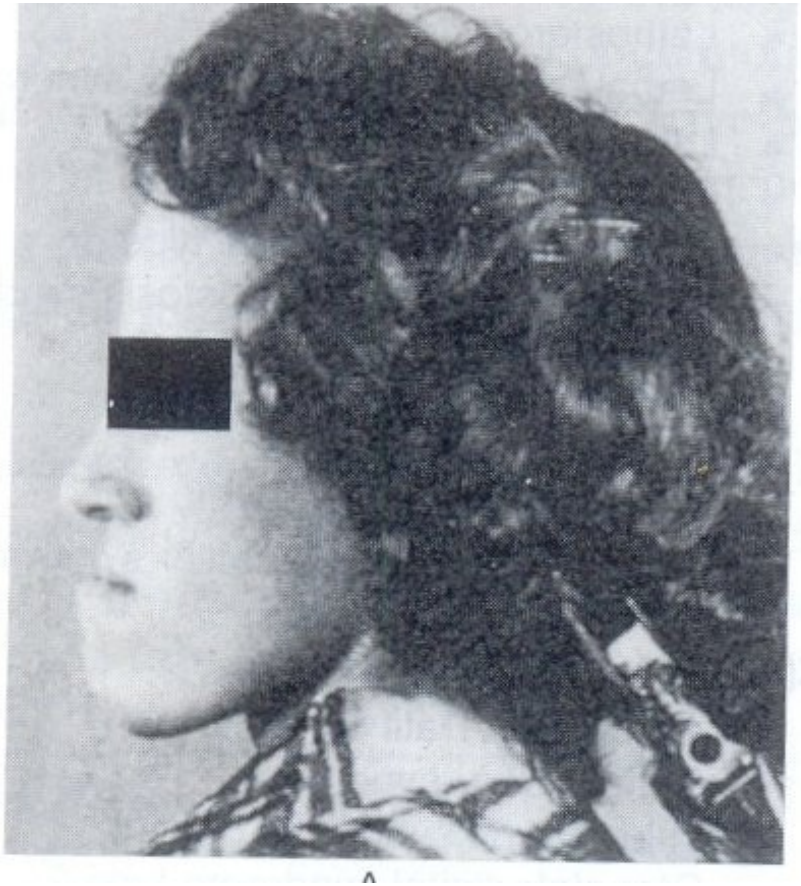


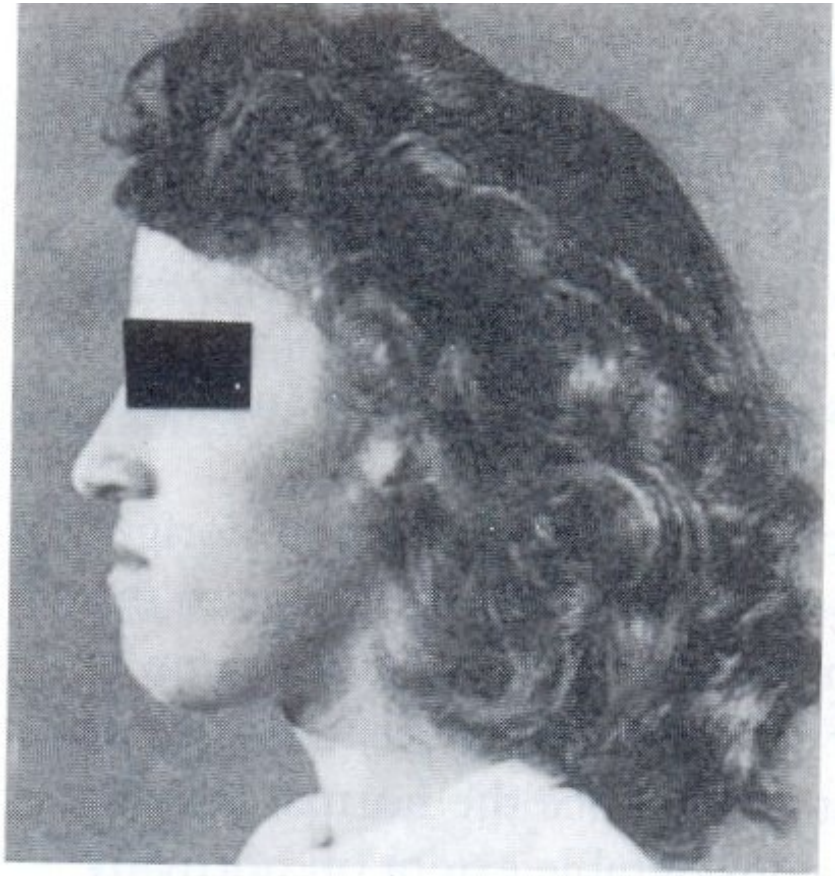
# MACROGNATHIA

- Abnormally large jaws
- Pituitary gigantism – both jaws large
- Maxillary enlargement- Paget's disease, Leontiasis ossea, Cherubism
- Mandibular enlargement- Acromegaly

Treatment

- Surgical correction of the defect





# FACIAL HEMIHYPERTROPHY/HYPERPLASIA

- Characterized by asymmetric overgrowth of one or more body parts
- Etiology
  - Hormonal imbalance
  - Incomplete twinning
  - Chromosomal abnormalities
  - Lymphatic abnormalities
  - Vascular abnormalities
  - Neurogenic abnormalities

# ANATOMIC CLASSIFICATION BY HOYME ET AL

A. Complex hemihyperplasia- Involvement of half of the body
B. Simple hemihyperplasia- Involvement of single limb
C. Hemifacial hyperplasia - Involvement of one side of the face

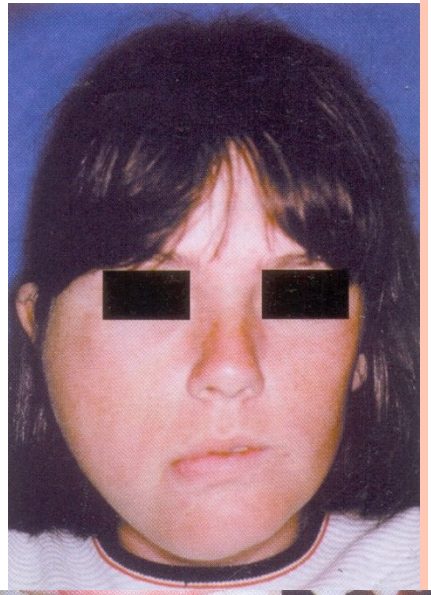
# SYNDROMES ASSOCIATED WITH

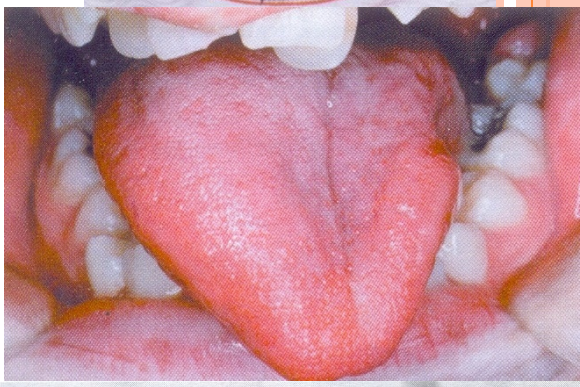
- Beckwith-Wiedemann syndrome
- Neurofibromatosis
- Klippel- Trenaunay- Weber syndrome
- Proteus syndrome
- McCune-Albright syndrome
- Epidermal nevus syndrome
- Triploid/diploid mixoploidy
- Langer –Gledion syndrome
- Multiple exostoses syndrome
- Maffucci's syndrome
- Ollier syndrome
- Segmental odontomaxillary dysplasia

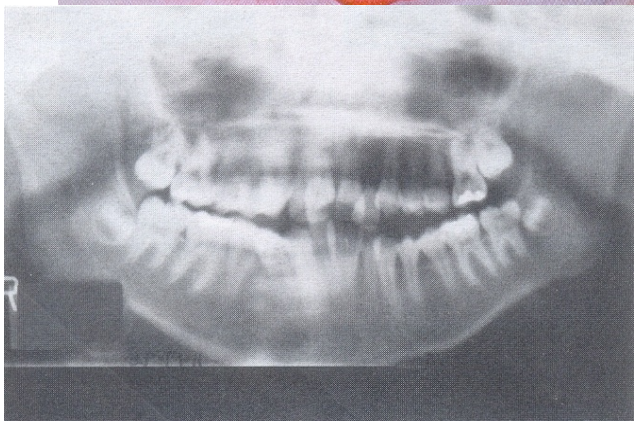
# CLINICAL FEATURES

- Enlargement of one side of face
- F > M
- Rt side = Lt side

- Oral Manifestations
  - Crown size
  - Root size & Shape
  - Rate of development of teeth
  - Unilateral enlargement of tongue
  - Enlargement of lingual papillae
  - Enlarged buccal mucosa



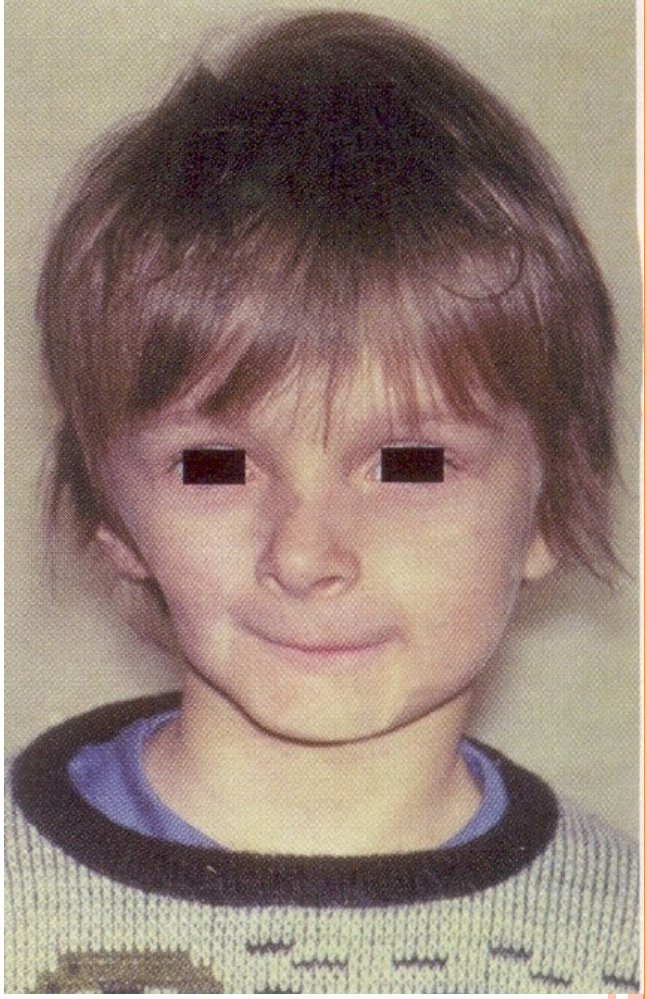


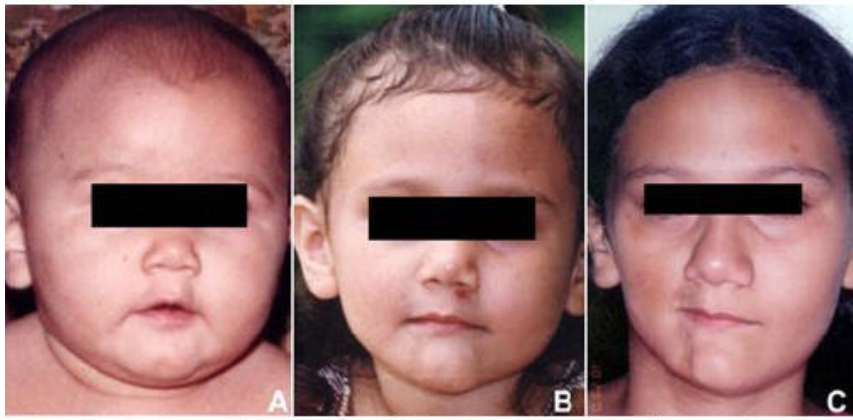


- Treatment
  - Cosmetic repair
- Differential diagnosis
  - Neurofibromatosis
  - Fibrous dysplasia

# FACIAL HEMIATROPHY/ PARRY ROMBERG SYNDROME

- Slowly progressive atrophy of the soft tissues of essentially half the face ⟶ progressive wasting of subcutaneous fat, accompanied by atrophy of skin, cartilage, bone, muscle.
- May spread to one side of neck & body.





- Etiology
  - Cerebral disturbances leading to increased & unregulated activity of sympathetic nervous system
  - Trauma
  - Infection
  - Hereditary
  - Peripheral trigeminal neuritis
  - Localized scleroderma

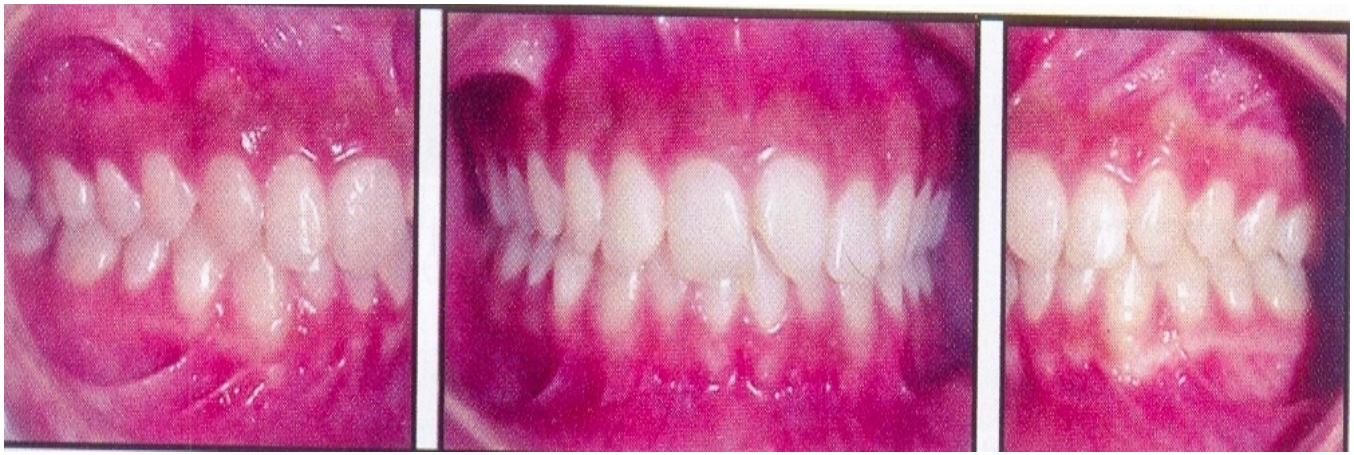
# CLINICAL FEATURES

- Atrophy of skin, subcutaneous tissue, muscle, bone and cartilage on affected side
- Begins in 1st decade & lasts for about 3 yrs before becomes quiscent.
- Basilar kyphosis
- Misshapen ear or small ear
- Dark pigmentation of the affected side
- Trigeminal neuralgia, facial paresthesia

# ORAL MANIFESTATIONS

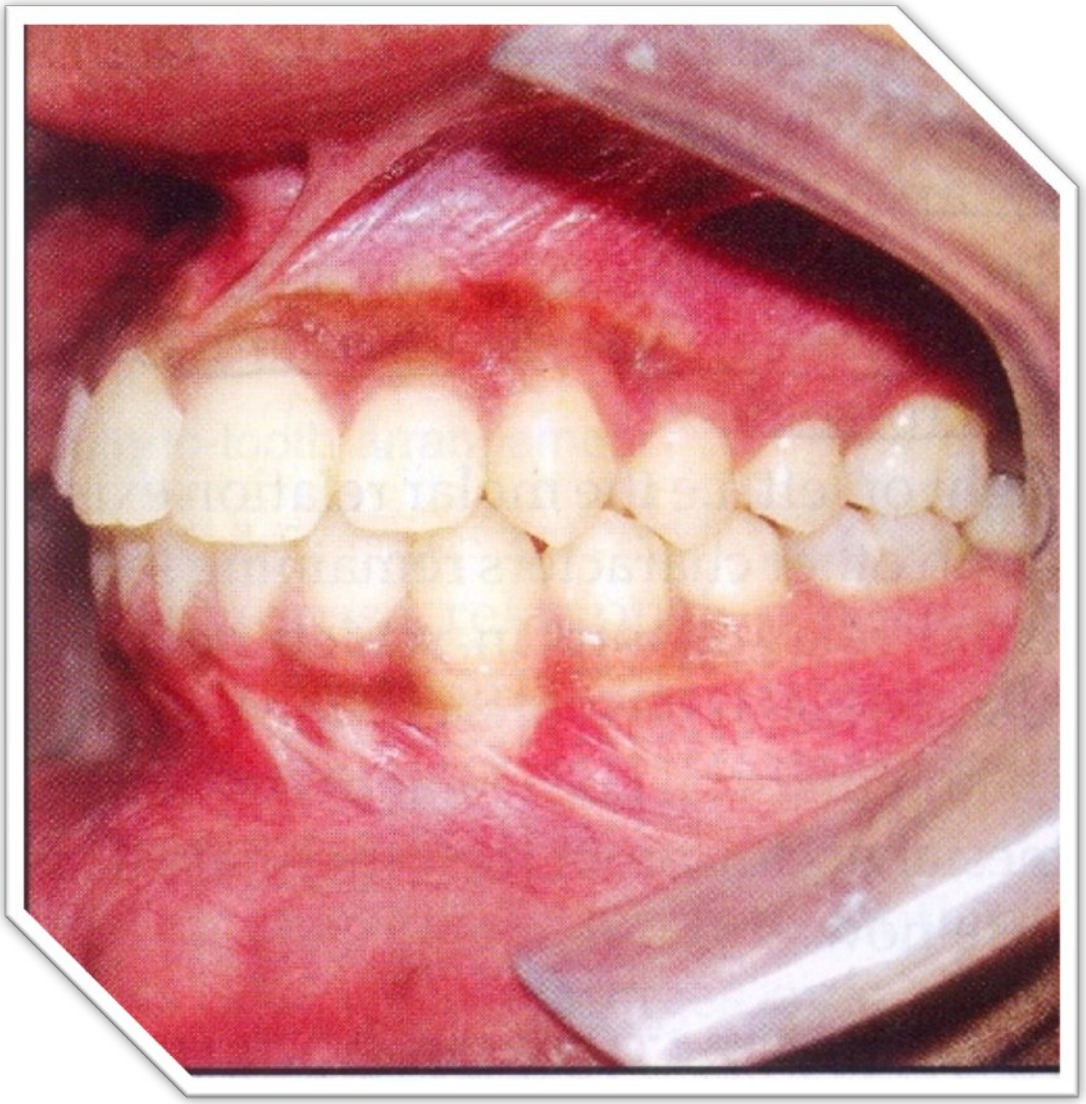
- Atrophy of half lip and tongue
- Shorter ramus and body of mandible resulting in malocclusion
- Delayed eruption of teeth on affected side

# ABNORMALITIES OF DENTAL ARCH RELATIONS

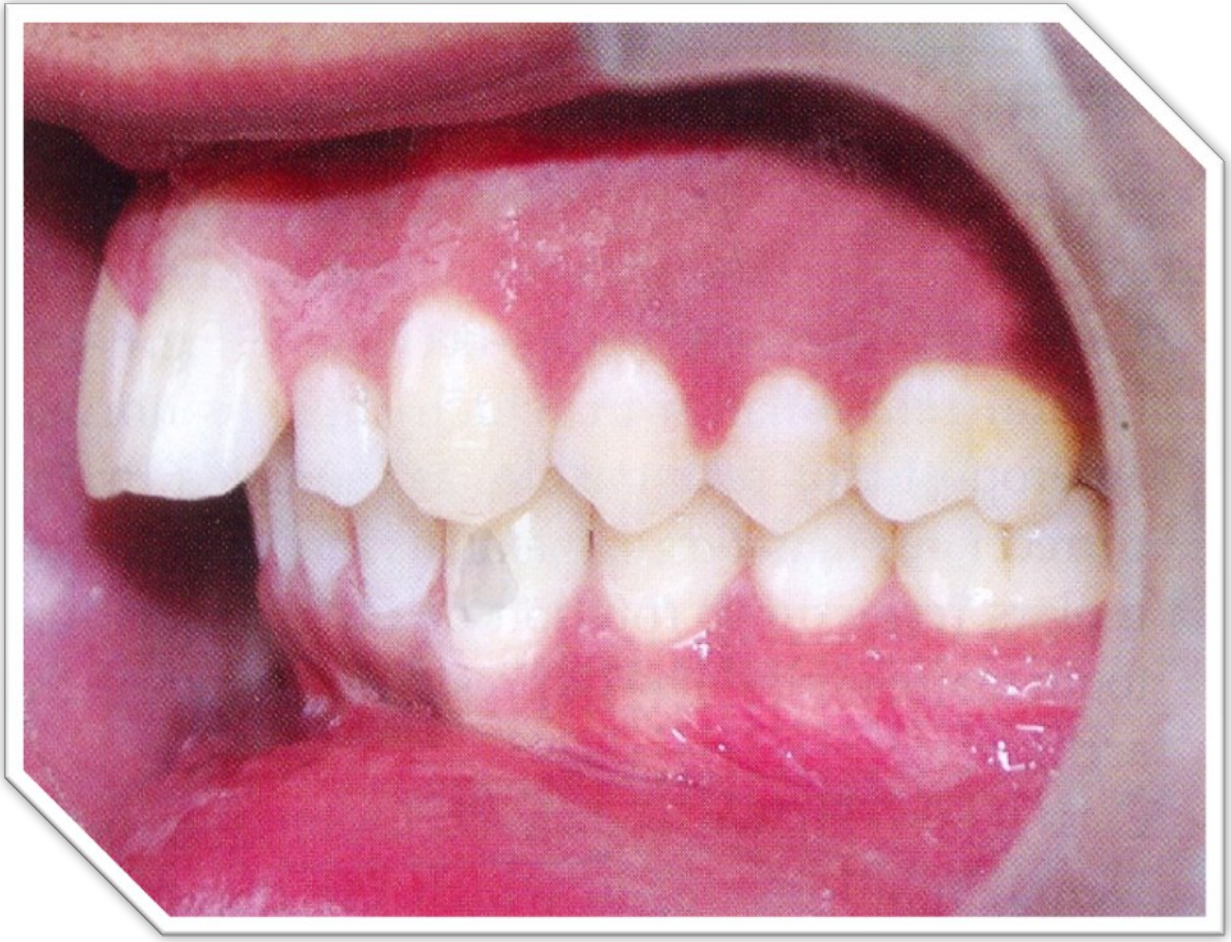


# ANGLE'S CLASSIFICATION

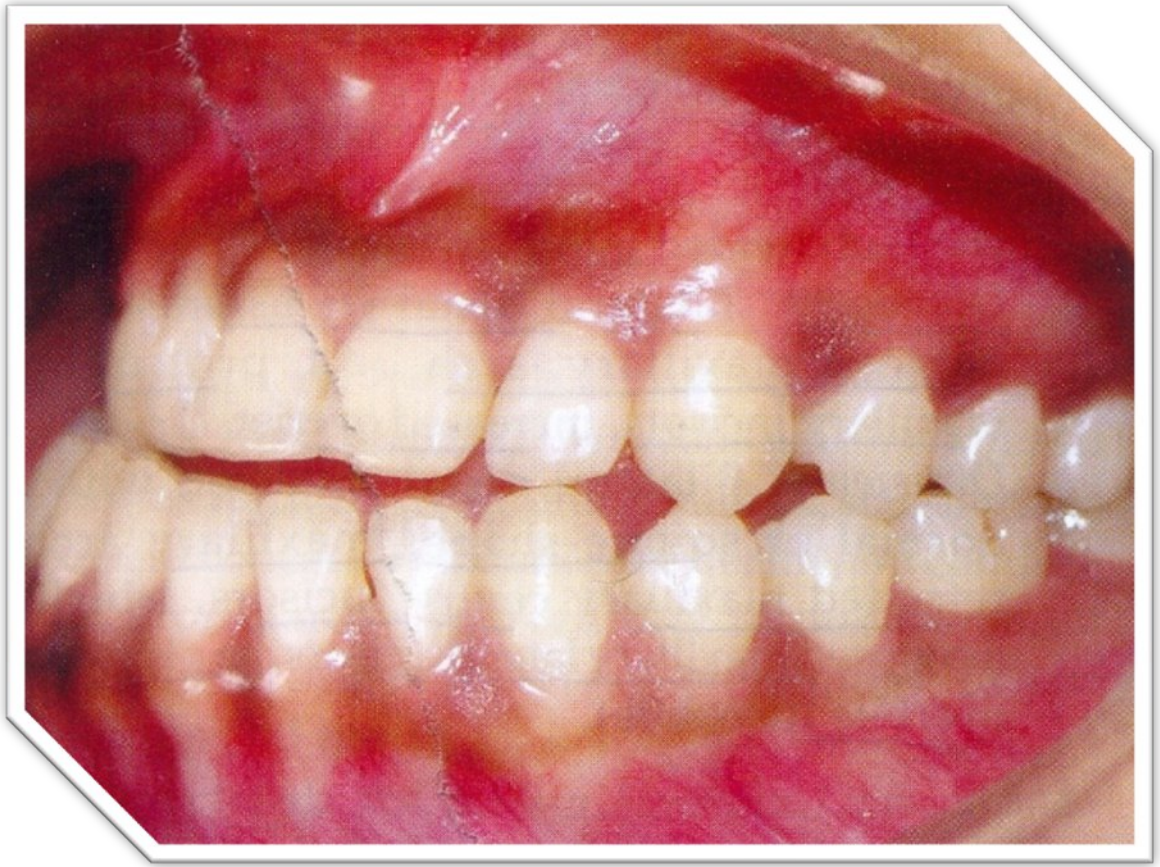
- Class I- Arches in normal mesiodistal relation



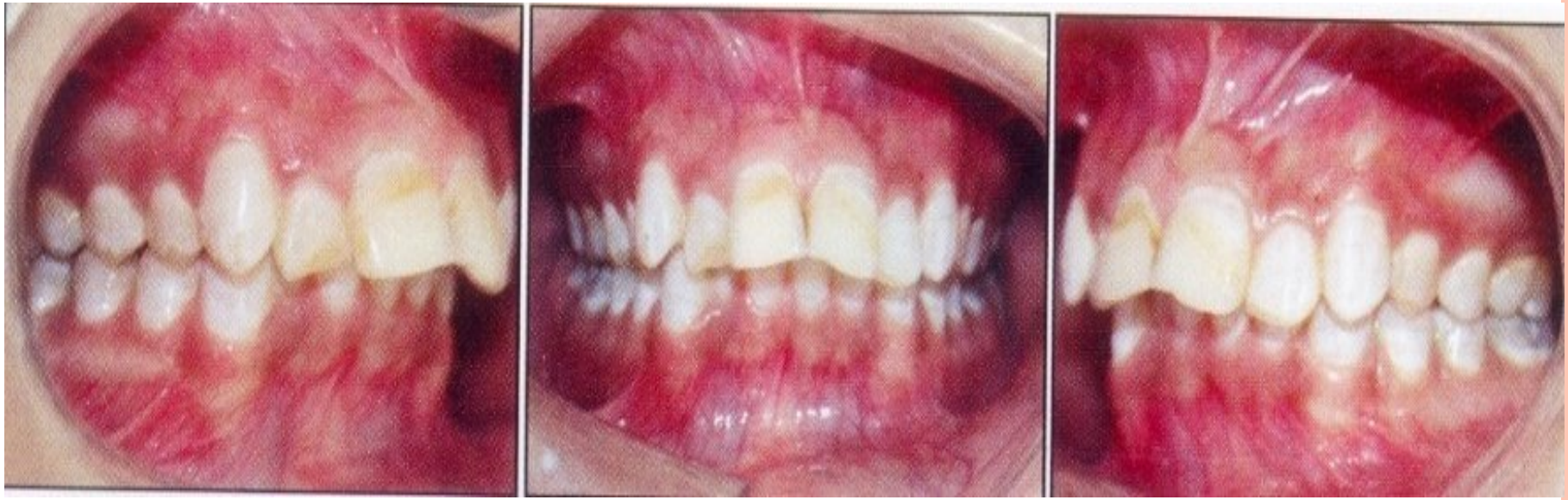
- Class II- Mandibular arch distal to normal in its relation to maxillary arch



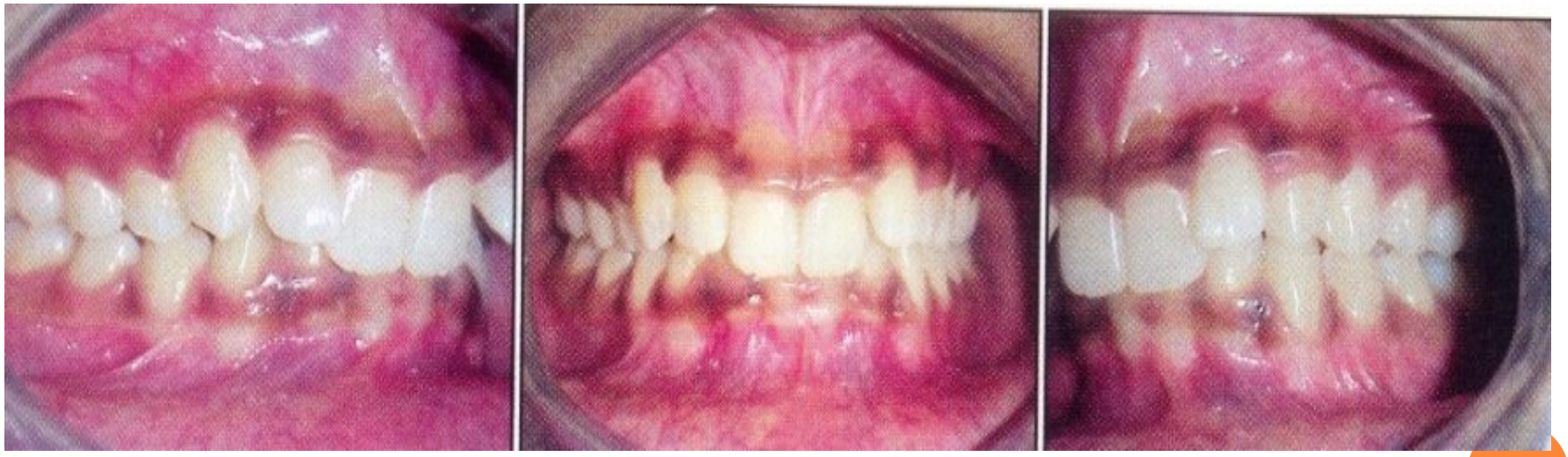
- Class III- Mandibular arch mesial to normal in its relation to the maxillary arch



- Division 1-  Bilaterally distal, protruding maxillary incisors
  - Subdivision- Unilaterally distal, Protruding maxillary incisors



- Division 2-  Bilaterally distal, retruding maxillary incisors
  - Subdivision- Unilaterally distal, Retruding maxillary incisors



# SUMMARY

- Agnathia
- Micrognathia
- Pierre Robin syndrome
- Macrognathia
- Facial Hemihypertrophy / Hyperplasia
- Facial Hemiatrophy / Parry Romberg Syndrome
- Abnormalities of dental arch relations

# BIBLIOGRAPHY


- Shafer's text book of oral pathology 5th & 6th edition
- Oral and maxillofacial pathology Neville, 2nd edition
- Color atlas of oral diseases Cawson, R. A. 8th edition

# Thank You