GENERAL CONSIDERATIONS

- Paresthesia, persistent anesthesia, is an altered sensation manifesting most often as “numbness”
- Paresthesia can present as pain—a phenomenon known as dysesthesia
- Occurrence of paresthesia is infrequent but a potentially compensable complication
- Consent for the use of local anesthetic must be considered and annotated
- Paresthesia most often occurs within hours subsequent a procedure and could be the first indication of an unanticipated complication
- The anesthetic agents most commonly discussed with regard to paresthesia are articaine (4%) and prilocaine (4%)
- Most paresthesia resolves within weeks to months subsequent the event
- Paresthesia that persists for more than 9 months is usually considered permanent
- Key to successful management is early recognition and appropriate documentation of the affected area to include judiciously mapping the area
- Persistent paresthesia beyond 6 to 8 weeks should be referred to an oral and maxillofacial surgeon for consultation

NERVES MOST COMMONLY INVOLVED

- Inferior Alveolar Nerve
- Lingual Nerve
- Mental Nerve

Note: Tongue paresthesia followed by lip paresthesia are the most common sites of involvement

Sequalae of nerve injury include:

- Inferior Alveolar Nerve (trismus, numbness of the lower lip, neuropathic pain)
- Lingual Nerve (trismus, numbness of the tongue, diminished sense of taste, reduced salivation, frequent tongue biting, neuropathic pain, and speech impairment)
- Mental Nerve (numbness of the chin, lip biting, and neuropathic pain)

RISK FACTORS

- Incomplete knowledge of the anatomy of the pterygomandibular fossa to include the relative positions of the constituent arteries, nerves, veins and the contiguous muscles
- Inappropriate selection of armamentaria for deploying infiltration techniques versus block injection protocol
- Inappropriate escalation of the anesthetic agent without adjusting for the particular patient or planned procedure
PREVENTION/RISK MITIGATION STRATEGIES

• Commit to refamiliarization with the intricate anatomy of the area to include the following:
  o The location and trajectory of the inferior alveolar nerve, the lingual nerve, the mental foramen, and recognized anatomical variations in the positioning of these nerves
  o Recall the rich vascularity of the pterygomandibular fossa thereby avoiding hematoma formation and the risk of a life threatening arterial bleed
  o Visualize the positions of the pterygoid, masseter and temporalis muscles to avoid intramuscular injection which increases the risks of trismus and the possibility of needle breakage

• Select the appropriate needle gauge and length for a block injection (25-27 gauge, long) and use a new syringe/needle for additional anesthetic efforts and attempts
  o Do not bend the needle—the needle already deflects when it engages the soft tissues
  o Do not insert to the hub of the needle

• Calculate the anesthetic agent dosage in relation to the patient’s known anesthetic history, the limits of the informed consent and the planned treatment
  o Adjust for anesthetic agent concentration 4% versus 2%
  o Consider the effects of other medications on toxicity calculations

• Adhere to a disciplined follow-up protocol for every patient and reconsider the implications of informed consent as it relates to anesthesia

• In the event of persistent paresthesia, you should:
  o Reevaluate the patient at regular intervals
  o Map, measure, and document (photographs) the numb area to determine relevant changes
  o Consider referral to a specialist

COMMON PRESENTATIONS AND COMPLAINTS WITH PARESTHESIA

• Prolonged numbness
  o Tongue numbness
  o Lip numbness
• Burning sensation
• Tingling sensation
• Pain
• Eye complications
• Bruising
• Taste changes
• Dry mouth
• Repeated tongue biting/burning
• Drooling

REPORTED INCIDENCE OF DENTAL POST INJECTION NERVE INJURY

• {1:26,762 to 1:160,571}
• 0.12% experience permanent injury – {reportedly associated with 34% to 70% in increased incidence of neuropathic pain}
• Reporting frequency has increased