Orofacial Injuries Due to Trauma Following Motor Vehicle Collisions:
Temporomandibular Disorders

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KEY POINTS FROM THIS ARTICLE:

1) Temporomandibular disorders are “a collective term that embraces a number of clinical problems that involve the masticatory muscles, the TMJ [temporomandibular joint], and associated structures.”

2) Most literature strongly supports the association between motor vehicle collisions, temporomandibular disorders, facial pain and headache.

3) Whiplash trauma may cause temporomandibular disorders via two mechanisms:
   A)) Direct orofacial trauma
   B)) Indirect or [inertial] injury; [this occurs without direct contact to the jaw]

4) “TMDs have been clearly documented following an MVC involving direct orofacial trauma and in a subset of WAD patients where no direct orofacial trauma is recognized.”

5) Temporomandibular disorders may not be identified at the time of first assessment of the whiplash-injured patient, but may develop weeks or more after the collision. [This delay in the development of temporomandibular symptoms following motor vehicle collisions is quite important].

6) “TMDs may not necessarily be diagnosed during a first assessment, but may manifest weeks or months after an MVC.”

7) Temporomandibular disorders in whiplash-injured patients occur predominantly in women.

8) Temporomandibular disorders in whiplash-injured patients may be associated with regional or widespread pain. [Important: some whiplash-injured patients, especially those with temporomandibular disorders, develop widespread pain syndrome].

9) Temporomandibular disorders following motor vehicle collisions may respond poorly to independent therapy and may be best managed using multidisciplinary approaches.
10) Approximately 33% of those in a motor vehicle collision develop whiplash-associated disorders.

11) Whiplash-injured patients who also develop TMD have a measurably worse recovery prognosis than those who do not also develop TMD.

12) Temporomandibular disorders associated with whiplash injuries include:
   • Jaw pain or dysfunction
   • Headache
   • Dizziness
   • Hearing disturbances
   • Neck pain and dysfunction
   • Reduced or painful jaw movement

13) Temporomandibular disorders often include TMJ sounds (clicking, crepitus) and catching or locking with opening or closing.

14) There is a “risk of delayed onset of temporomandibular disorders following a motor vehicle collision.” Of whiplash-injured patients, approximately 4 times more patients have temporomandibular disorders at 1 year compared to the first evaluation following the collision.

15) “The potential delay in onset of TMDs following an MVC raises concerns about diagnosis, prognosis, management and medico-legal issues.”

16) “Regional and widespread physical symptoms as well as psychological disturbances are common in motor vehicle collision patients.”

17) Air bag deployment injuries include:
   • TMJ injury
   • Maxillofacial fractures
   • Burns
   • Eyes injuries
   • Ear injuries
   • Cranial VII paresis
   • Neuropathic facial pain (Cranial V injury)
   • Basal skull fractures
   • Transection of the internal carotid artery
   • Atlanto-occipital dislocation
   • Spinal cord injuries

18) “Approximately 15–40% of patients with acute whiplash associated disorders develop chronic symptoms.”

19) “TMDs in WAD are more common in females and can be associated with regional or widespread pain that may reflect central, systemic and psychological effects.”