

Diagnosis of Temporomandibular Joint Arthrosis

2. Arthroscopic Differentiation

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ABSTRACT. Arthroscopy was performed on 43 joints of 34 patients with painful locking of the temporomandibular joint. The subjects were 32 joints with closed-lock (non-reducible anterior disk displacement) and 11 joints with osteoarthritis, consisted of 8 males and 26 females, from 15 to 69 years old with an average of 38.5 years. In closed-lock joints, synovitis on the posterior pouch, fibrillation of the eminence, fibrous adhesion from the anterior pouch to medial capsule were observed. On the other hand, joints of osteoarthritis disclosed extensive synovitis, fibrillation and adhesion. Discal perforation was indicated in only one joint with closed-lock and 5 joints with osteoarthritis arthroscopically.

These arthroscopic findings could clarify the intra-capsular pathosis of two TMJ disorders, also differentiate them each other.

Key words : temporomandibular joint — closed-lock — osteoarthritis — arthroscopy

Recently, temporomandibular joint (TMJ) arthroscopy has been advanced as a diagnostic and therapeutic method for organic disorders such as internal derangement and osteoarthritis.¹⁻⁴⁾ It has gained much attention and is now being employed in many institutes. Unlike other procedures such as conventional X-ray and arthrographic examination, TMJ arthroscopy enables the direct visualization of inner aspects of the joint, and may implicate some therapeutic means.⁵⁾

MATERIALS AND METHOD

Among last 2 years, we arthroscopically examined 43 TMJs of 34 patients with painful locking of the TMJ. The patients consisted of 8 males and 26 females, ranging in age from 15 to 69 years, a mean of 38.5 years. In addition to routine physical examination, conventional preoperative X-ray and arthro-tomography were performed in all joints. Their diagnoses were closed-lock (non-reducible anteriorly displaced disk) in 32 joints and osteoarthritis in 11. The conservative therapy, given for about 1 month's duration, had not alleviate the symptoms. Therefore, arthroscopy of the TMJ was performed. Under

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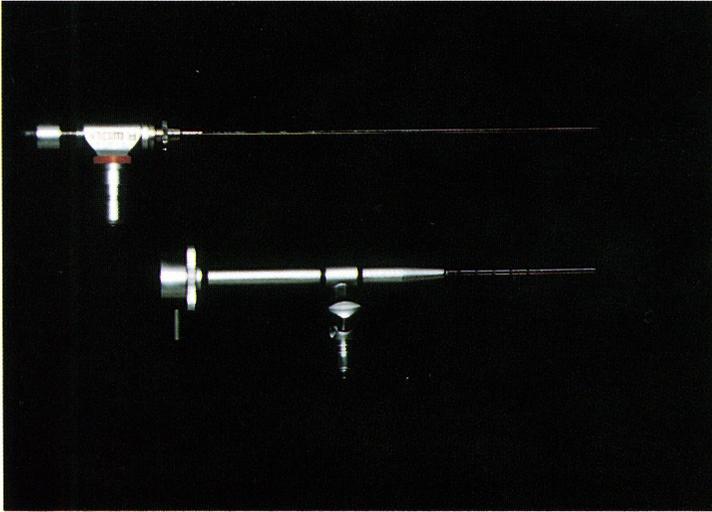


Fig. 1.

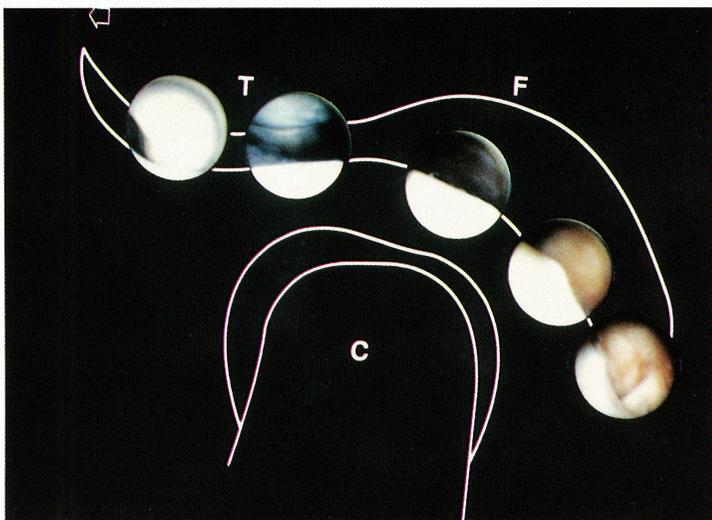


Fig. 2.

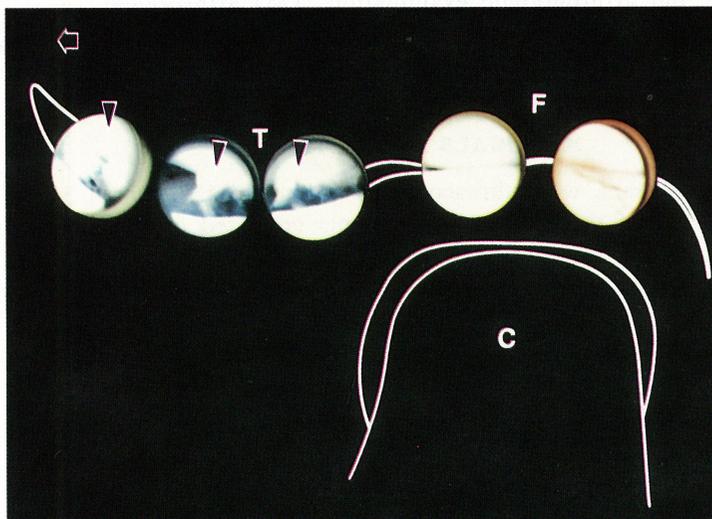


Fig. 3.

- Fig. 1. Wolf telescope® for the TMJ (above), with a trocar sleeve (below).
- Fig. 2. Normal arthroscopic view of the left TMJ of a 28-year-old male patient.
C : condylar head F : articular fossa of the temporal bone
T : tubercle of the temporal bone
Arrow indicates to the front.
- Fig. 3. Arthroscopic view of closed-lock with 1 month duration of locking of a 34-year-old female left TMJ. Fibrillation is observed on the fibrocartilage around the tubercle (arrow head).
- Fig. 4. Arthroscopic view of closed-lock with 4 months duration of locking of a 69-year-old male left TMJ. Fibrous adhesion revealed on the anterior edge of the anterior pouch (arrow head).
- Fig. 5. Arthroscopic view of osteoarthritis with a 68-year-old male left TMJ. Inflammatory change and fibrous adhesion are observed extensively.
- Fig. 6. Arthroscopic view of osteoarthritis with a 52-year-old female left TMJ. A large perforation is seen on the posterior attachment accompanied by exposure of the condylar head (arrow head).

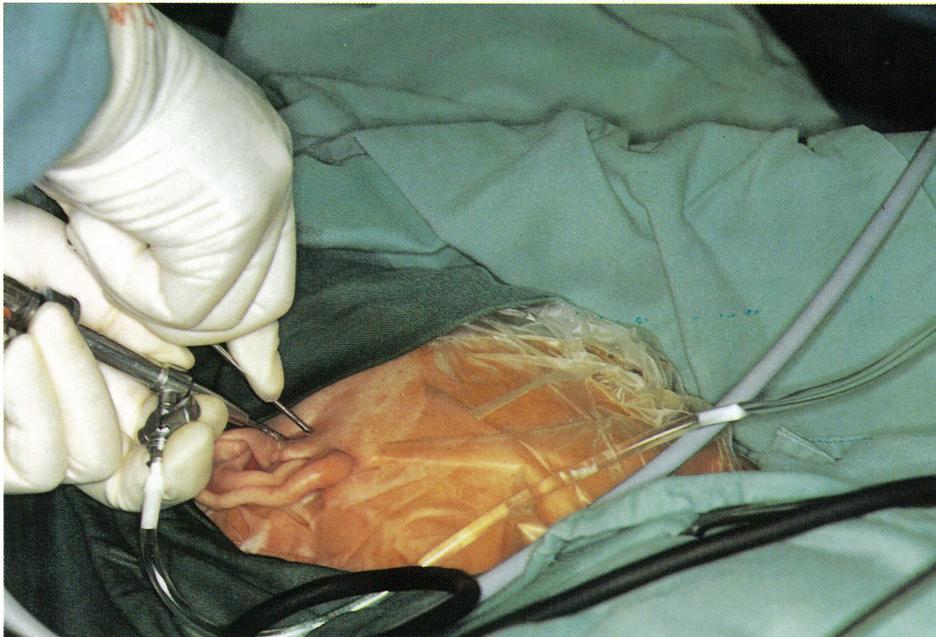


Fig. 7. Arthroscopic surgery with lysis and lavage technique.

either general or local anesthesia, the superior joint compartment was punctured by inferolateral approach[®] using a Wolf telescope[®] (1.9 mm in diameter, Riko Commercial Firm Co.) (Fig. 1) and examined arthroscopically.

RESULTS

Fig. 2 shows a normal arthroscopic observation of the left TMJ of a 28-year-old male. Clear and whitish shining synovial membrane is seen

(Fig. 2). The pathological arthroscopic findings obtained were inflammatory changes (synovitis) such as redness and hyperemia of the synovial membrane, fibrillation of the fibrocartilage, fibrous adhesion between the disk and temporal component, and discal perforation.

(closed-lock)

Inflammatory changes revealed on the synovial membrane of the posterior pouch and posterior attachment. Fibrillation was commonly observed on the fibrocartilage of the eminence (Fig. 3). In the shorter duration of locking (3 to 6 months), fibrous adhesion was located on anterior edge of the anterior pouch (Fig. 4). In the joints of longer duration of locking (8 to 12 months), fibrous adhesion was observed from anterior pouch to the medial capsule. Discal perforation was extremely rare (1 joint) in closed-lock lesions.

(osteoarthritis)

Lesions of osteoarthritis disclosed extensive inflammatory changes and erosion of the synovial membrane, extensive fibrillation and fibrous adhesion of the fibrocartilage throughout the superior joint compartment (Fig. 5). Perforations of the posterior attachment were seen in 5 joints of osteoarthritis (Fig. 6).

These arthroscopic findings on two TMJ disorders made it possible to distinctly differentiate them from each other. The authors attempted to perform arthroscopic surgery along with lysis and lavage technique^{5,7)} (Fig. 7) for 28 joints of two disorders, and obtained good results in 22 joints.

Lastly, complications occurred in two patients (2 joints). These consisted of paresis of the temporal branch of the facial nerve and remarkable edema from the cheek to the pharynx. The facial nerve paresis disappeared in about two months, the other bucco-pharyngeal edema improved the following day.

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