

颞颌关节紊乱的MR诊断

福建医科大学附属第一医院影像科

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颞颌关节紊乱

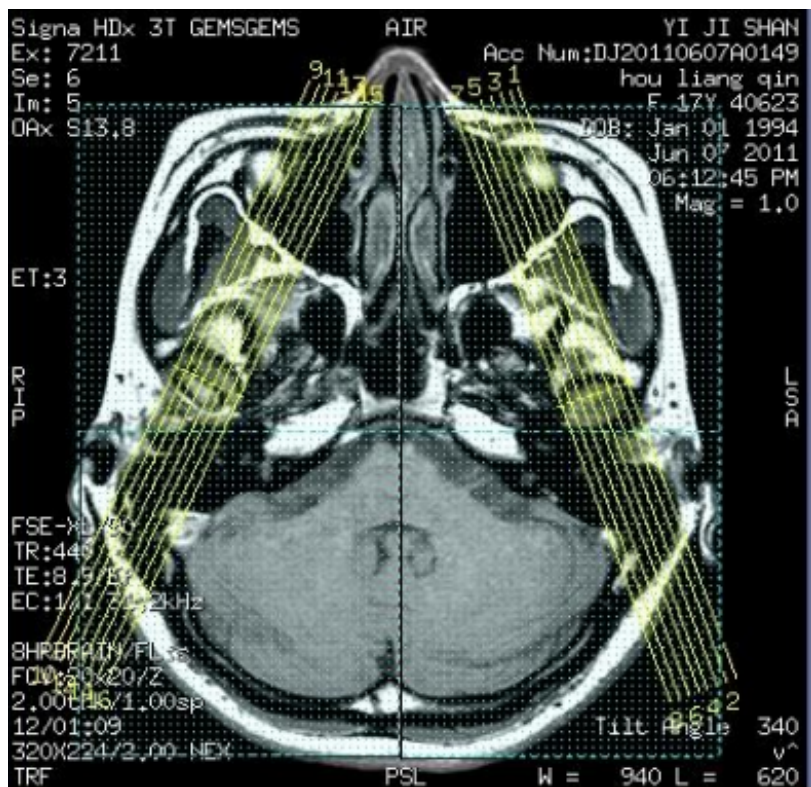
(Temporomandibular Disorders , TMDs)

- 颞颌关节紊乱（TMDs）是累及颞下颌关节及（或）咀嚼肌的一组疾病的总称。

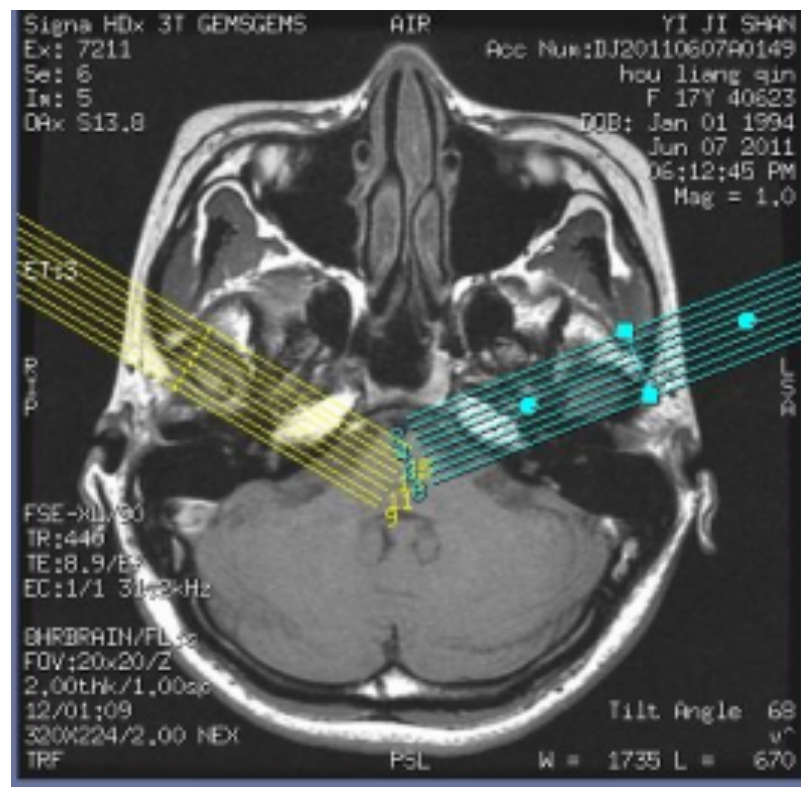
临床表现

- 可见于任何年龄，但以青壮年多见，女性明显多于男性。
- 临床症状：颞下颌关节区疼痛、关节运动障碍、关节区弹响或杂音、头痛。

斜矢状位



斜冠状位



三平面定位

横断面T1定位像

矢状面T1FSE

矢状面脂肪抑制T2FSE

冠状面脂肪抑制质子加权

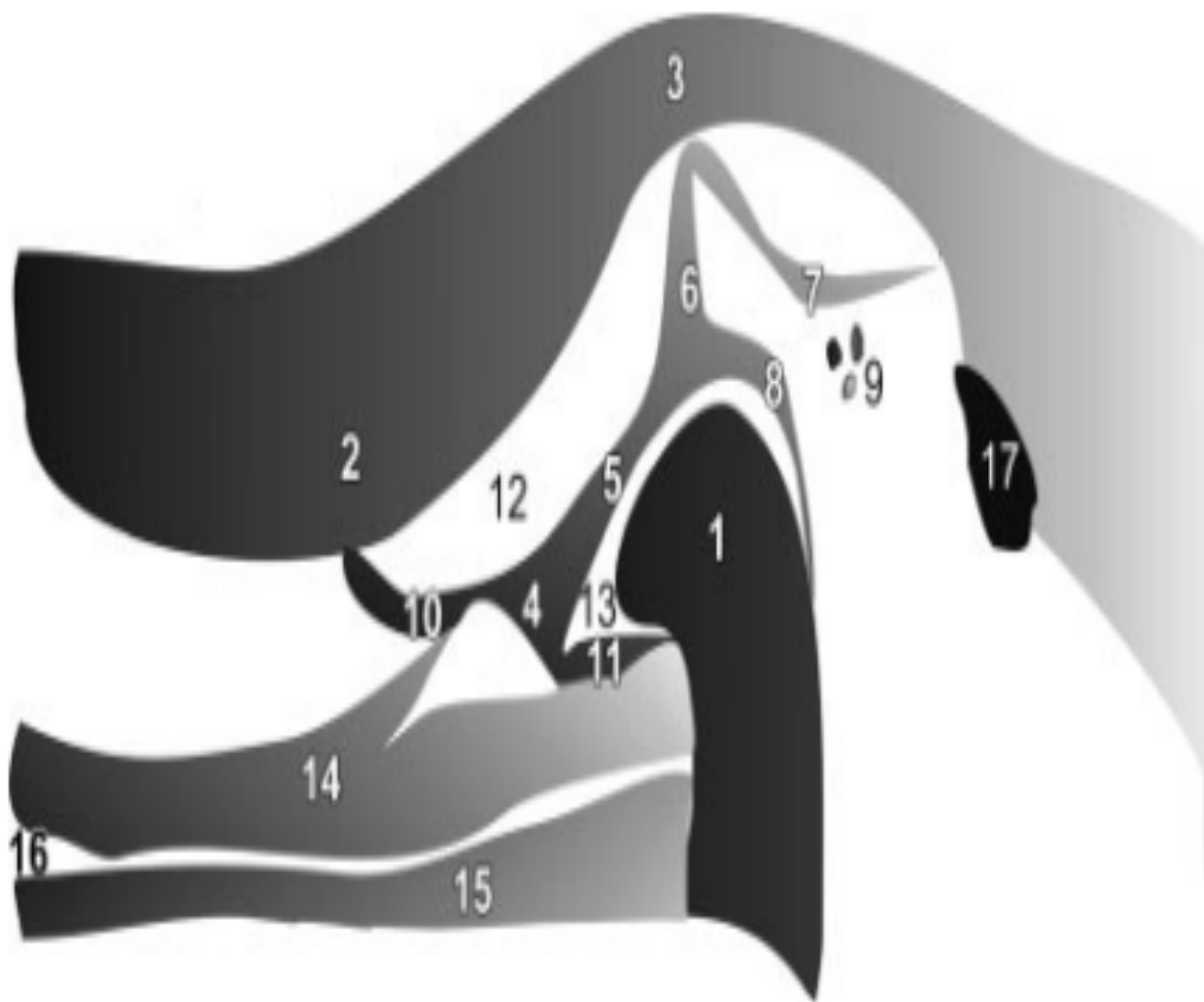
冠状面T1FSE

磁共振规范化扫描方案（3.0T）

---中华磁共振应用学院系列教材

颞下颌关节 TMJ





- 1-髁突
- 2-颞骨关节结节
- 3-下颌窝
- 4-关节盘前带
- 5-关节盘中带
- 6-关节盘后带
- 7-上关节盘后带
- 8-下关节盘后带
- 9-血管神经
- 10-囊状上联合
- 11-囊状下联合
- 12-上关节间隙
- 13-下关节间隙
- 14-翼外肌上头
- 15-翼外肌下头
- 16-翼突间隙
- 17-外耳道

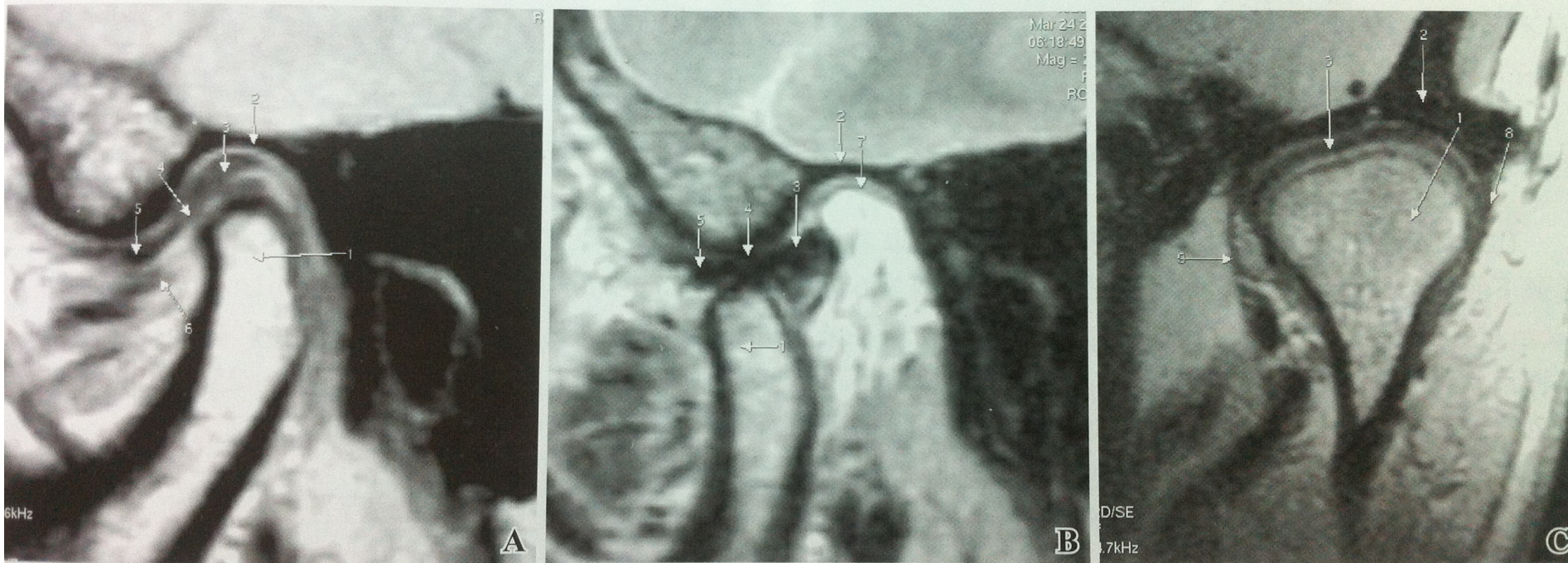
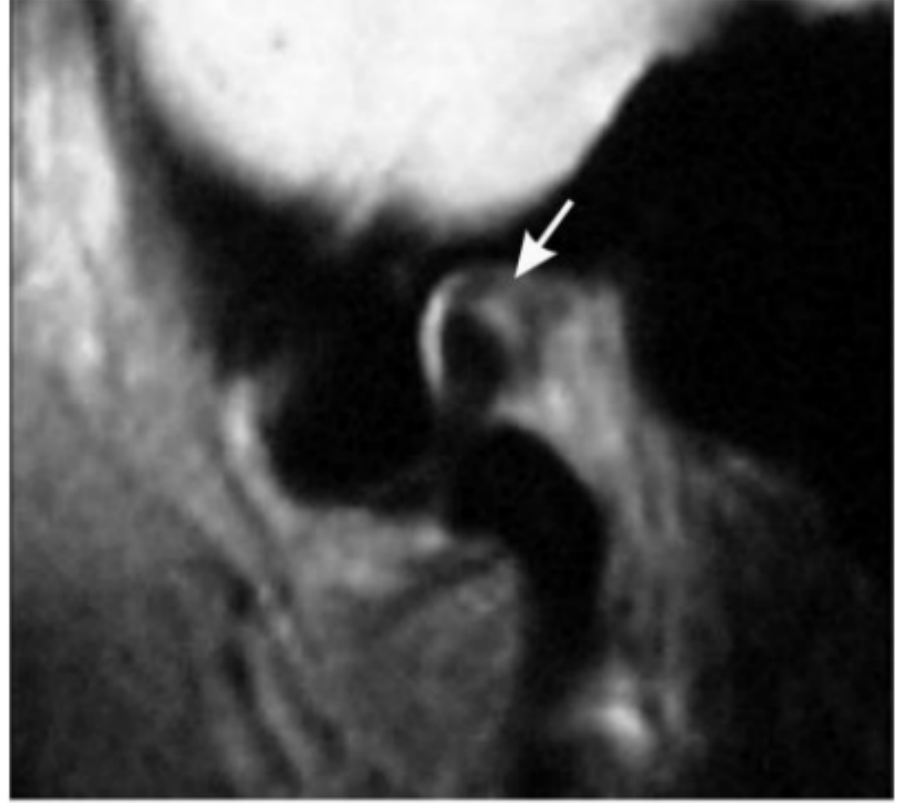
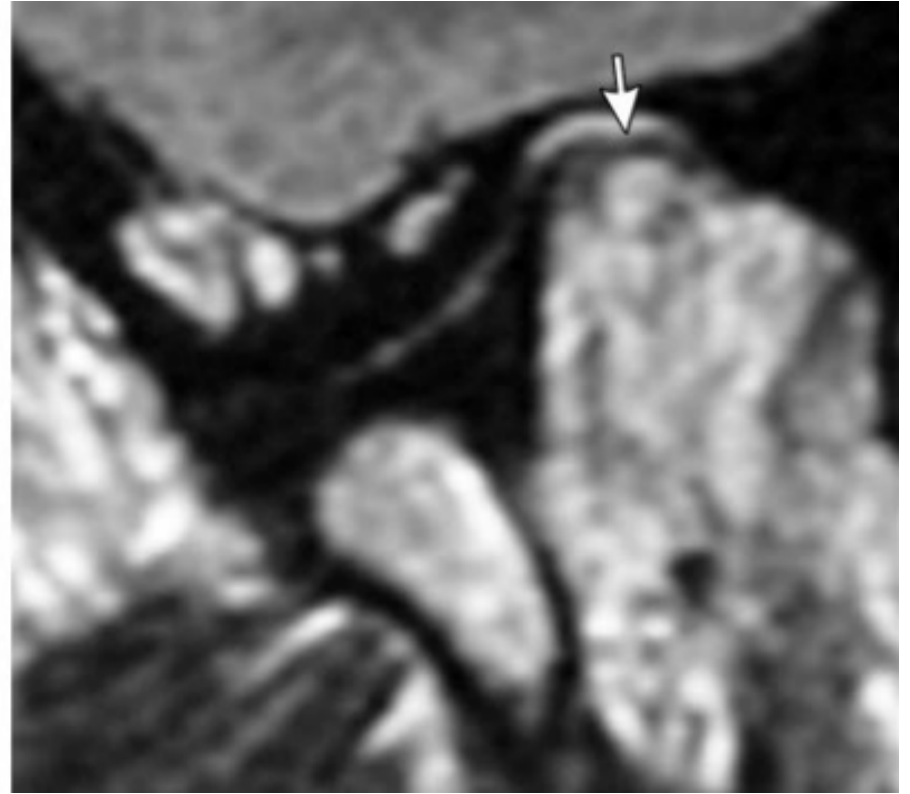
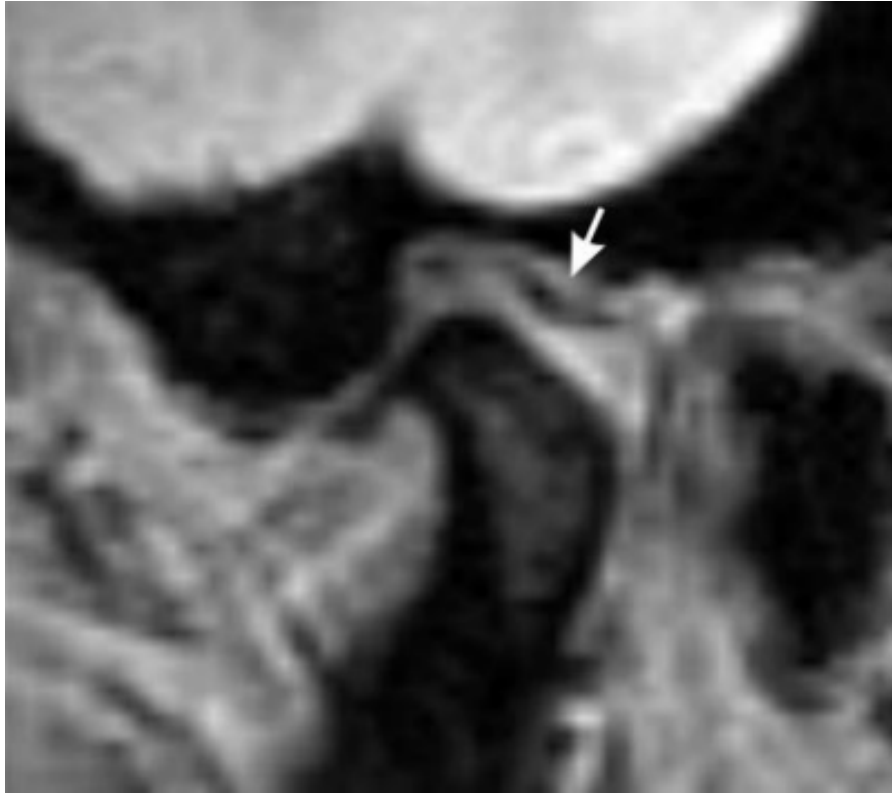
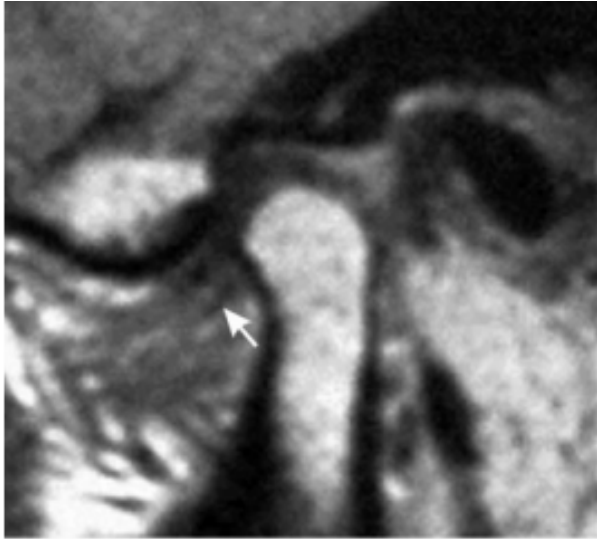


图 10-1-1 正常颞下颌关节 MRI A. 矢状面闭口 PD 像；B. 矢状面开口 PD 像；C. 冠状面闭口 PD 像：
 1. 下颌髁突；2. 颞骨关节面（关节窝）；3. 关节盘后带；4. 关节盘中带；5. 关节盘前带；6. 翼外肌上头和下头之间的纤维带；7. 关节盘后附着；8. 外侧关节囊；9. 内侧关节囊。

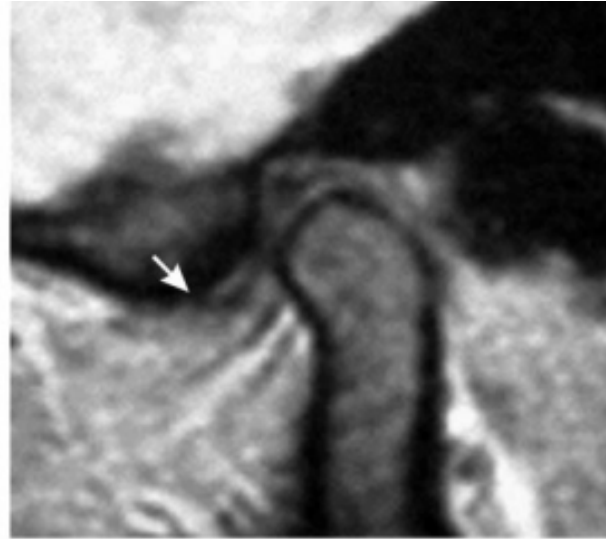




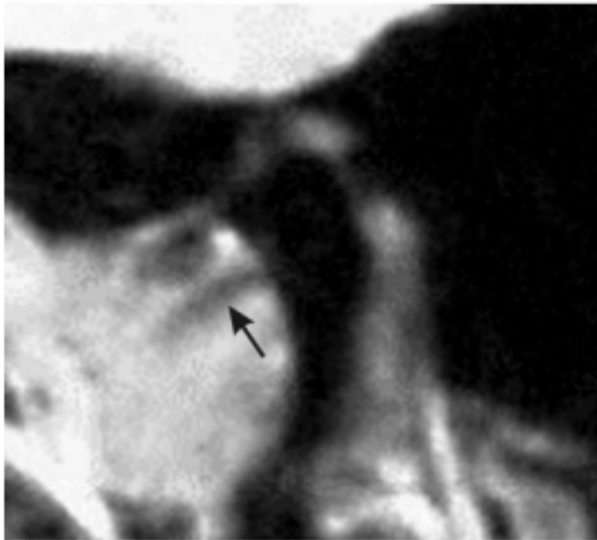
翼外肌



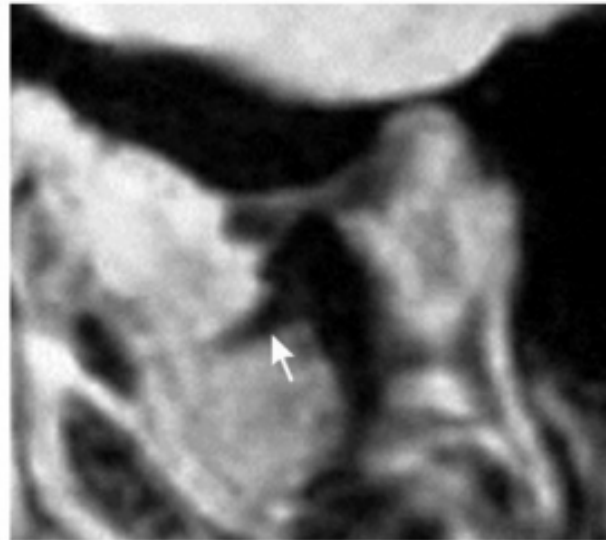
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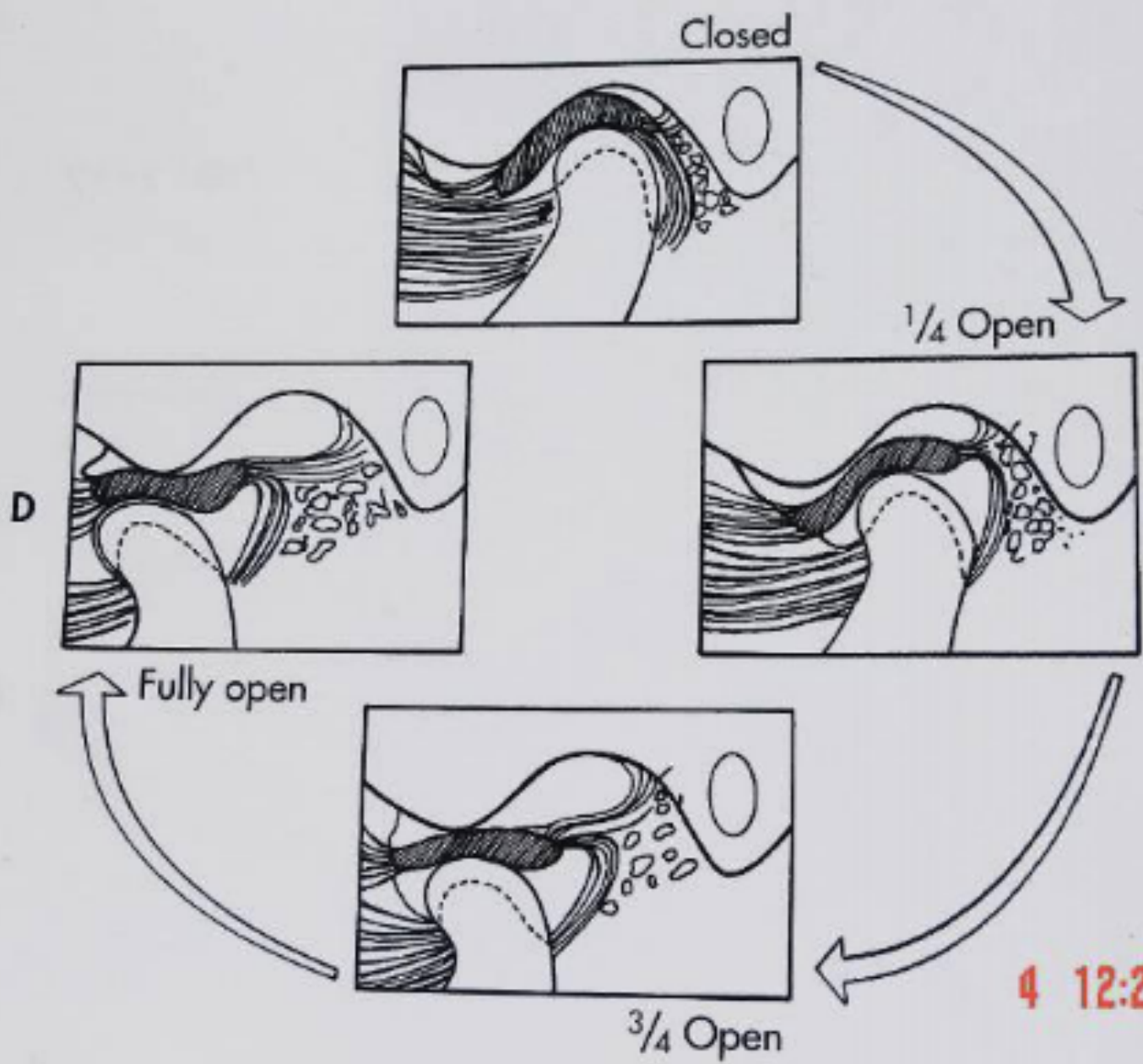
b.



c.



d.



4 12:23 PM

Table 1
Direct and Indirect MR Imaging Signs of TMJ Dysfunction

Direct signs

Abnormal disk morphologic features

- Crumpled
- Rounded
- Flat
- Perforated

Abnormal disk displacement in closed-mouth position

Anterior displacement

More frequently observed

Posterior band exceeds 10° (9,18,19) or 30° (20) from vertical

Posterior displacement

Rare

Posterior band exceeds -10° (9,18,19) or -30° (20) from vertical

Lateral or medial displacement

Abnormal disk movement in open-mouth position

Anterior disk displacement with reduction

Anterior disk displacement without reduction

Stuck disk (disk remains fixed)

Osteoarthritic changes of the condyle

- Flattening
- Osteophytes
- Erosion
- Sclerosis

Indirect signs

- Large amount of joint fluid (joint effusion)
 - Increased thickness of LPM attachments
 - Rupture of retrodiskal layers
-

Note.—Numbers in parentheses indicate reference numbers.

颞颌关节紊乱的MR直接和间接征象

(一) 直接征象

1、关节盘形态异常： 皱缩、变圆、变平、穿通

2、闭口位关节盘异常移位

前移：最常见，后带超过髁突横嵴垂直线 10° / 30°

后移：罕见，后带超过髁突横嵴垂直线 10° / 30°

内外侧移位

3、张口位关节盘异常移位

可复性前移

不可复性前移

锁颌

4、髁突骨结构异常

变平、骨赘、侵蚀、硬化

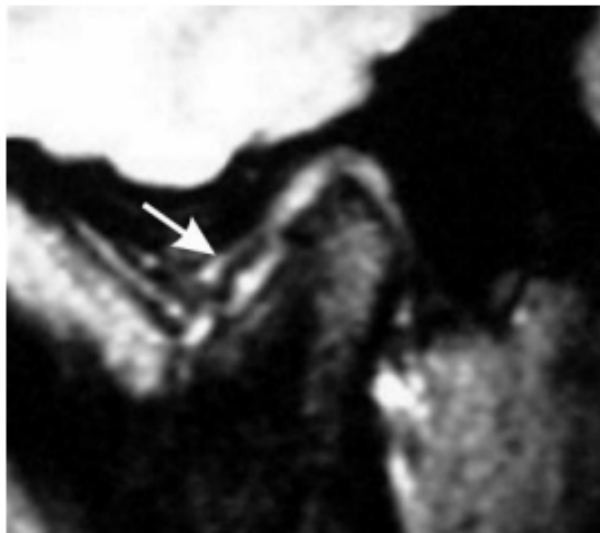
(二) 间接征象

1、关节渗出

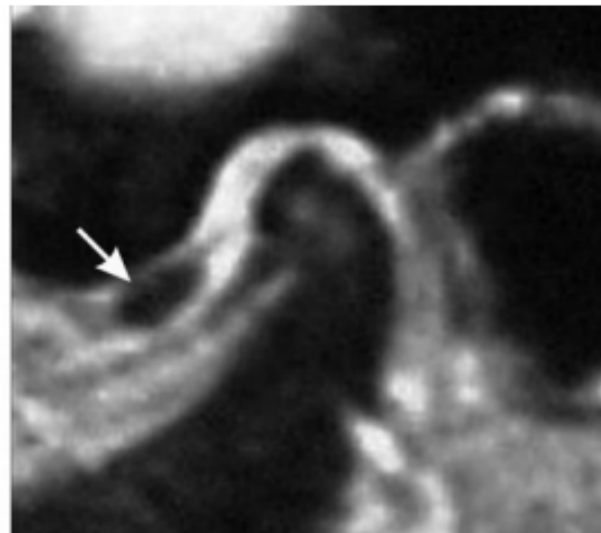
2、翼外肌增厚

3、双板区断裂

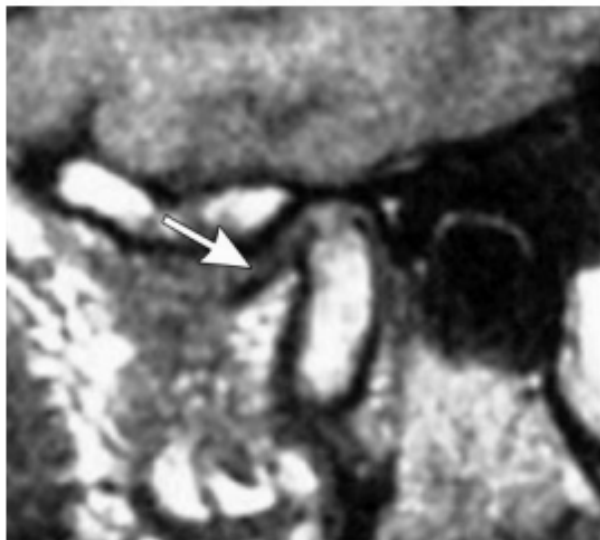
直接征象： 关节盘形态异常



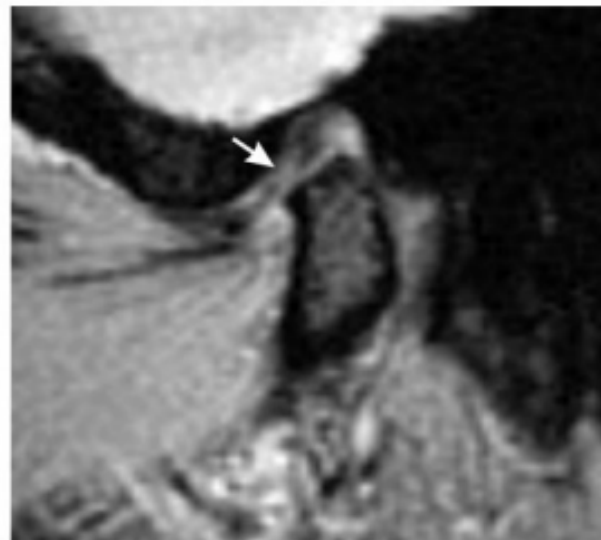
a.



b.

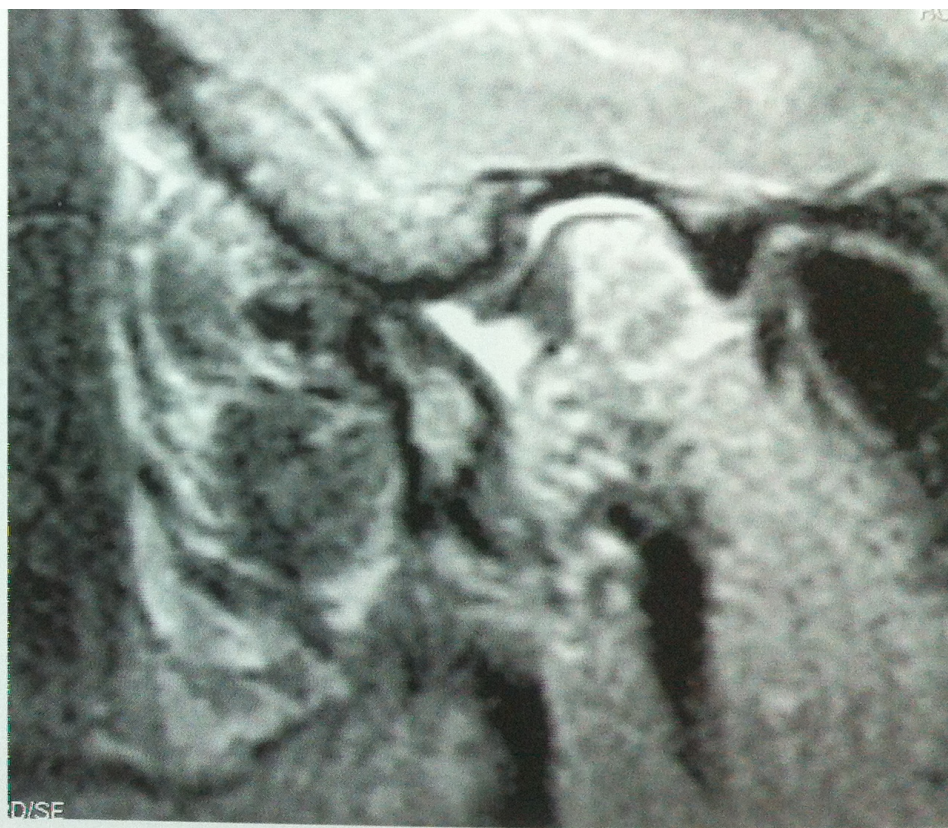
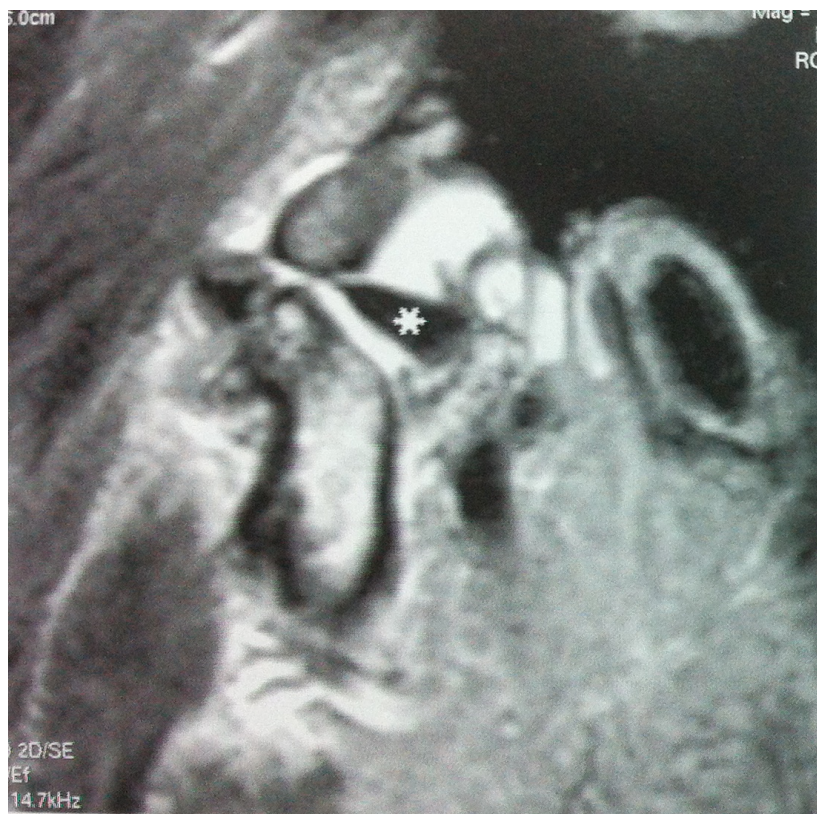


c.

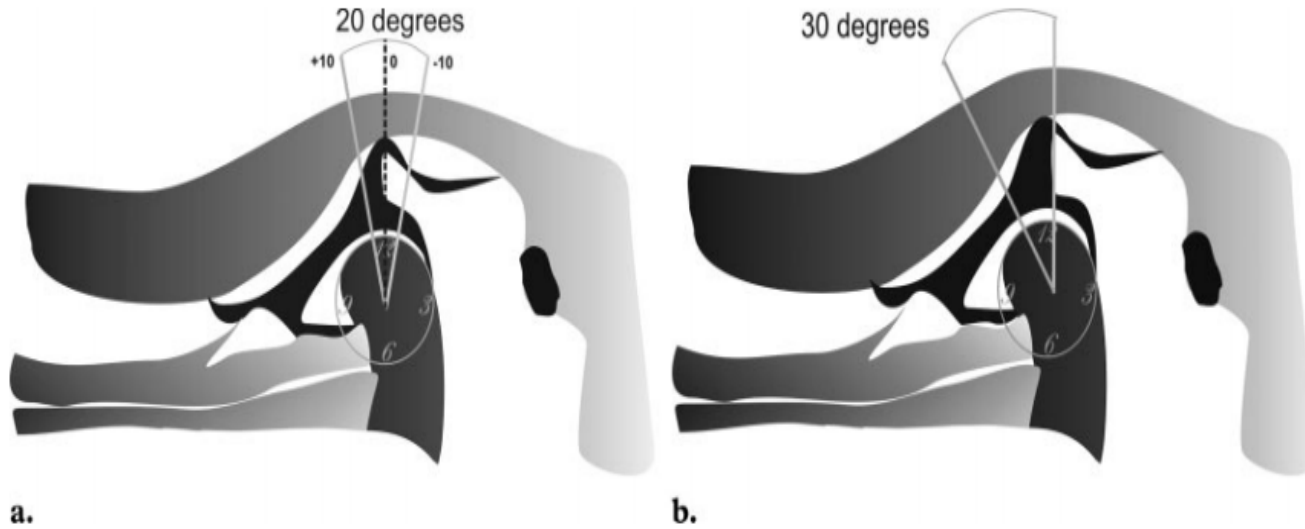


d.

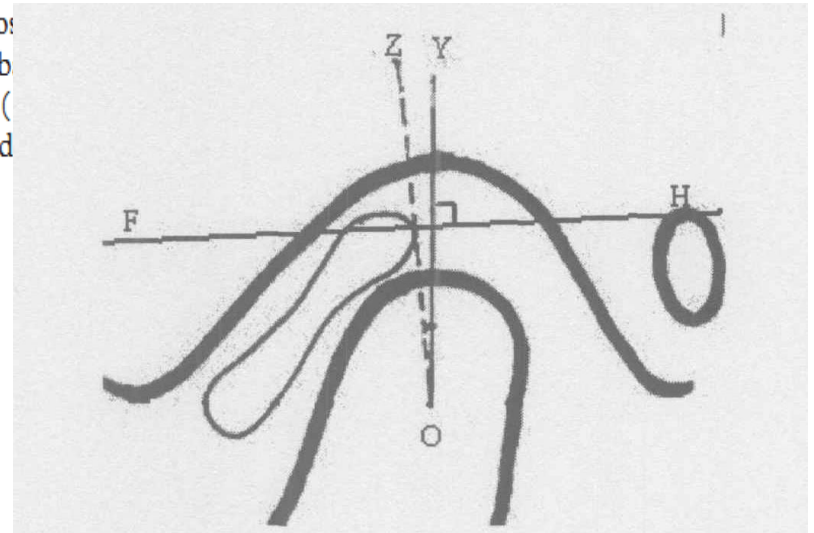
关节盘穿孔、撕裂



直接征象： 关节盘移位



a. **b.**
Figure 5. Drawings (sagittal oblique views) illustrate disk displacement in the closed mouth. A pathologic condition is considered to be present if the angle between the posterior border of the condyle (twelve o'clock position) exceeds 10°. (b) Rammelsberg et al (1983) suggested that anterior disk displacement of up to 30° be considered normal to better correlate disk displacement with symptoms of TMJ dysfunction.



- 34%的无症状志愿者存在关节盘向前移位
- 16-23%的有症状患者关节盘位置正常

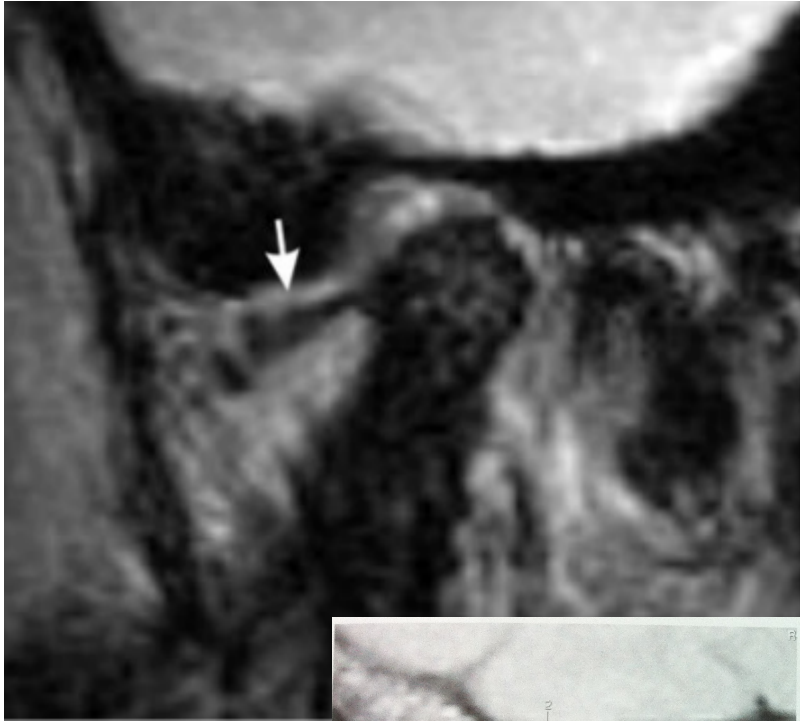
关节盘前移位

- 可复性前移:

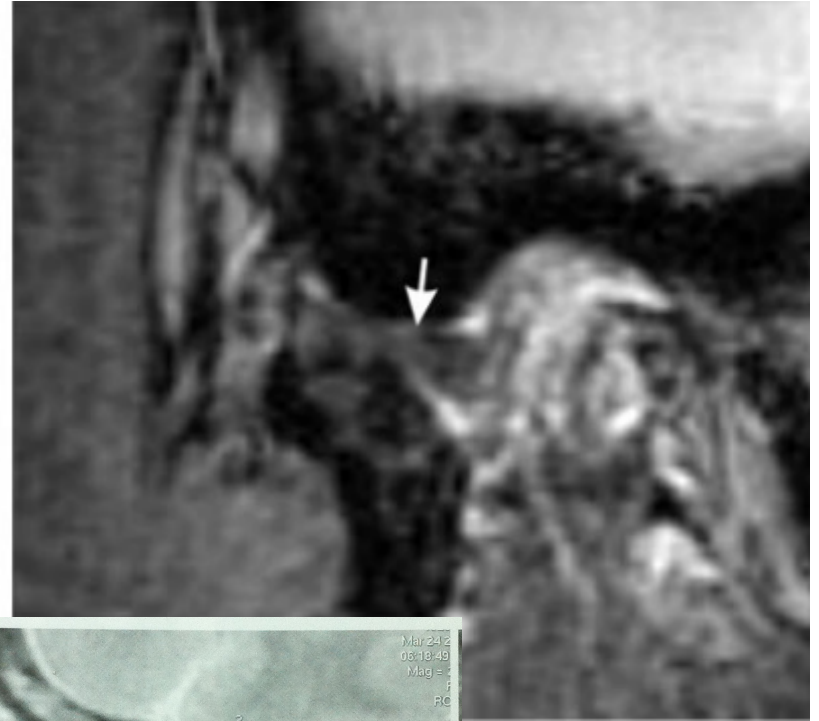
闭口位，关节盘后带位于下颌髁突横嵴顶的前方

张口位，关节盘中带位于下颌髁突横嵴顶的上方

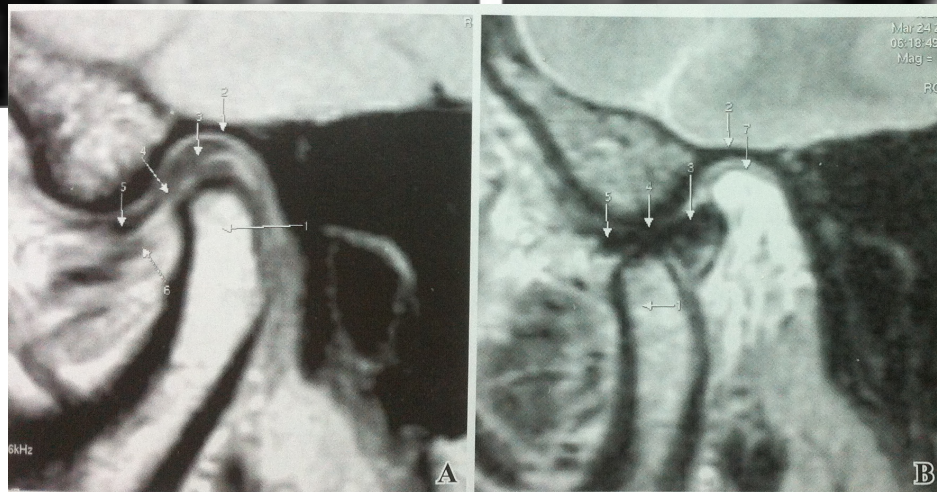
可复性前移



闭口位



张口位



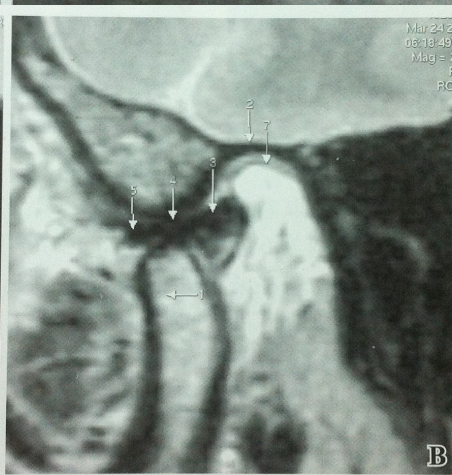
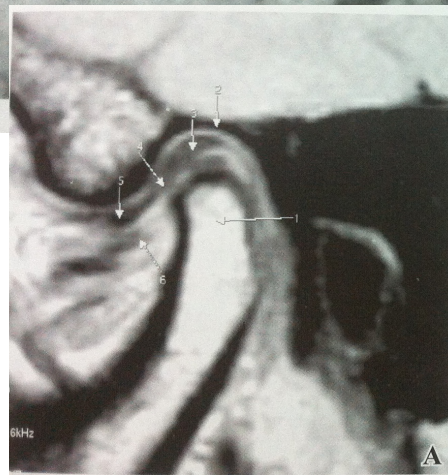
可复性前移



闭口位



张口位



关节盘前移位

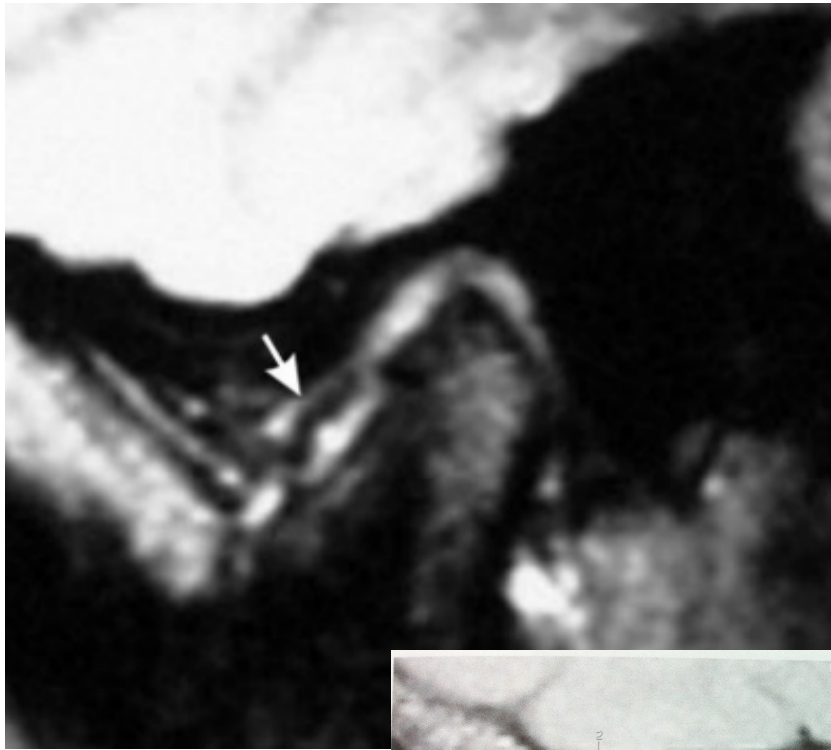
- 不可复性前移:

闭口位，关节盘后带位于下颌髁突横嵴顶的前方

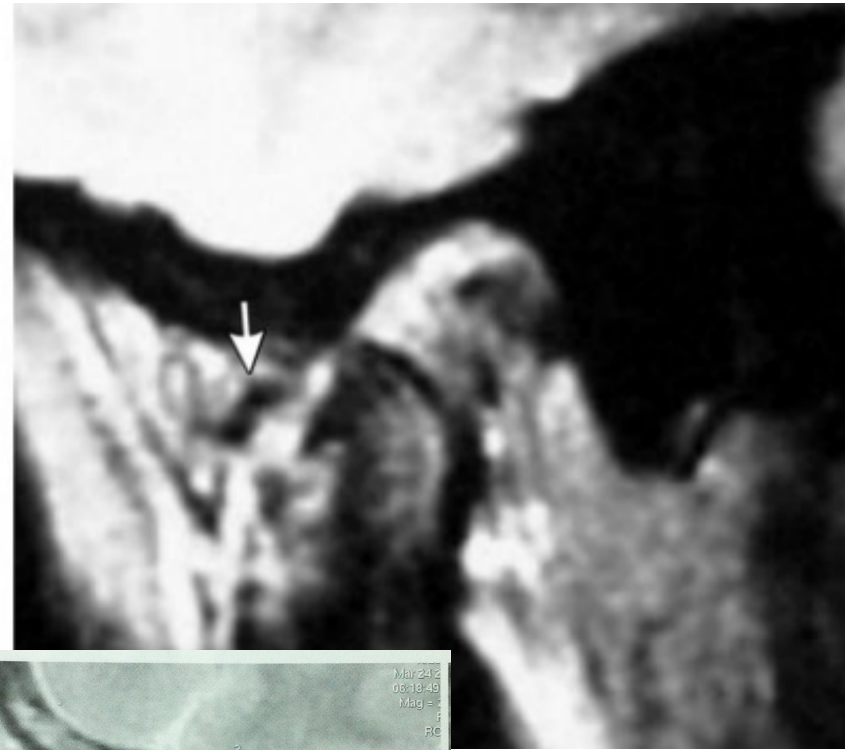
张口位，关节盘后带仍位于下颌髁突横嵴顶的前方，

双板区拉伸变直

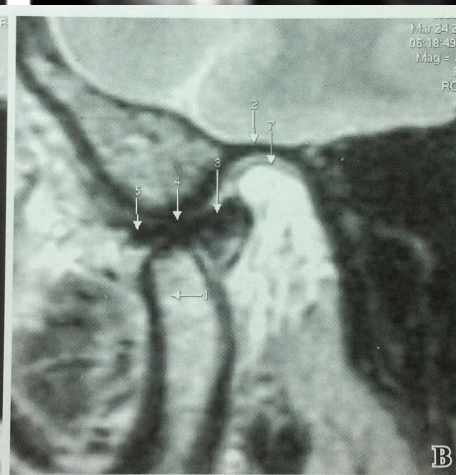
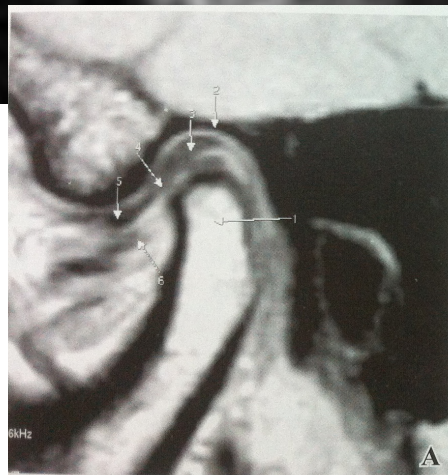
不可复性前移



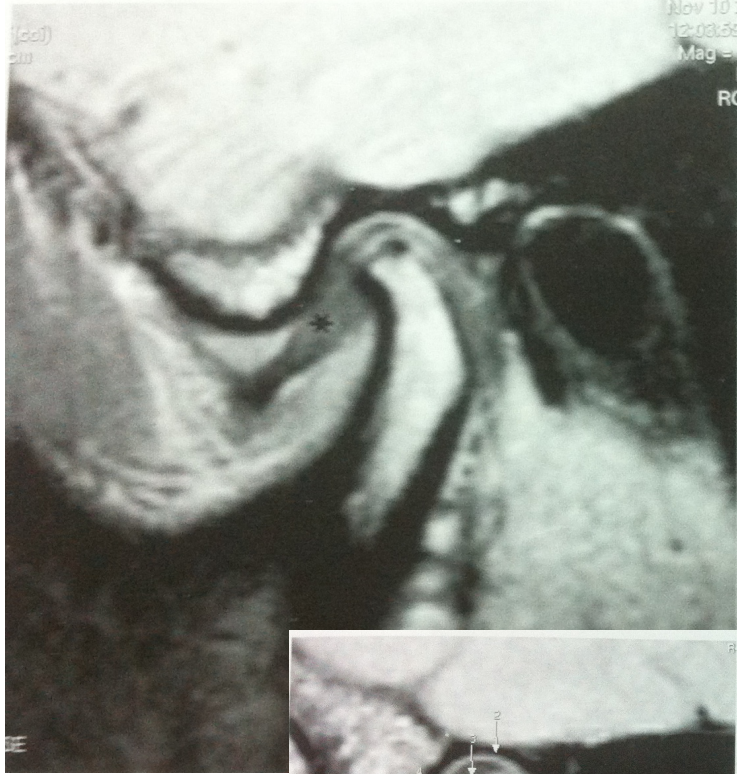
闭口位



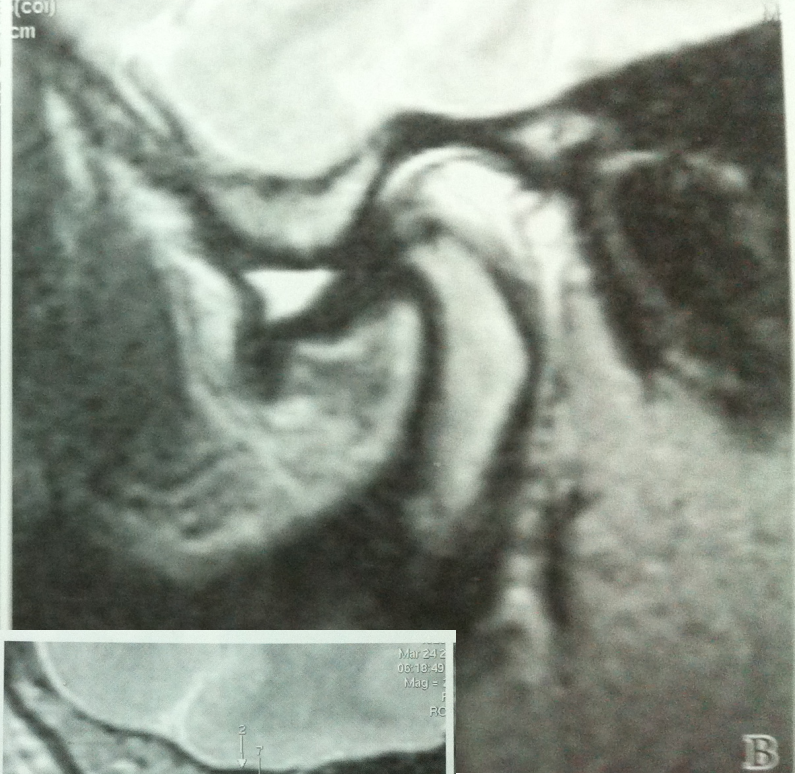
张口位



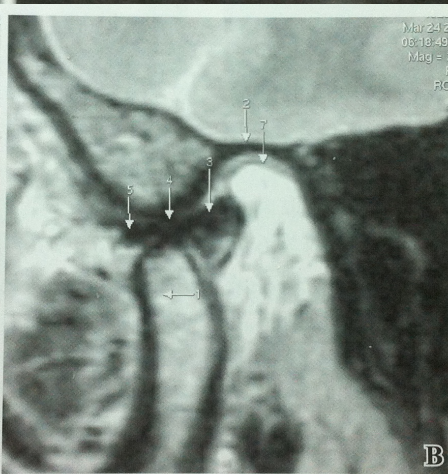
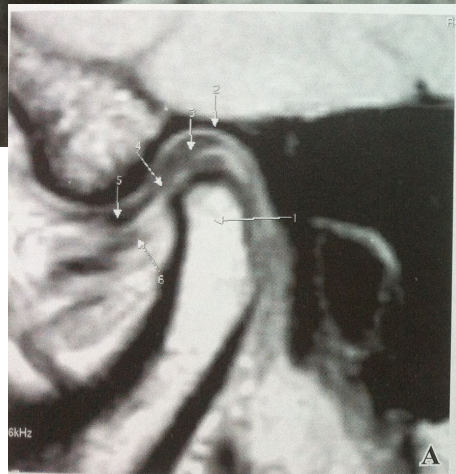
不可复性前移



闭口位



张口位



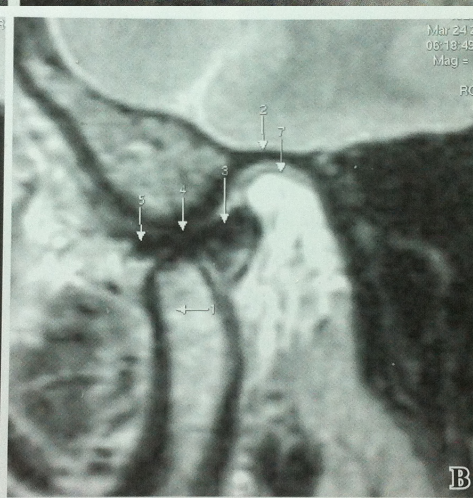
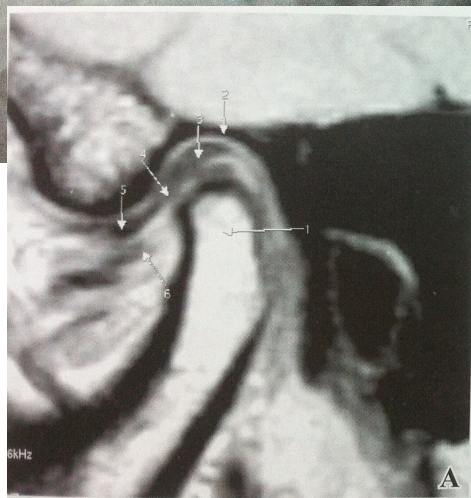
不可复性前移伴盘变形



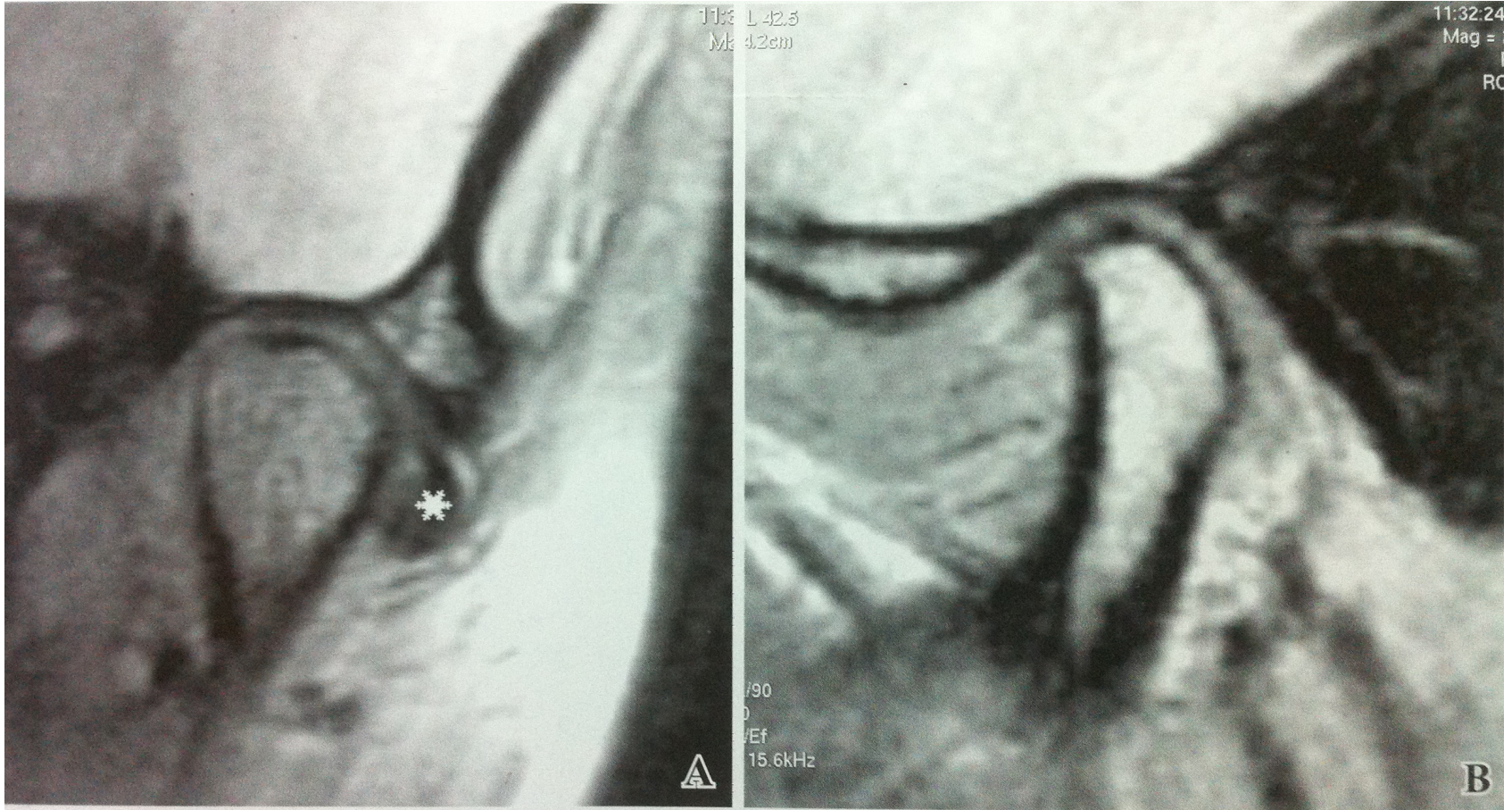
闭口位



张口位



关节盘侧向移位



斜冠状位

空窝征

斜矢状位

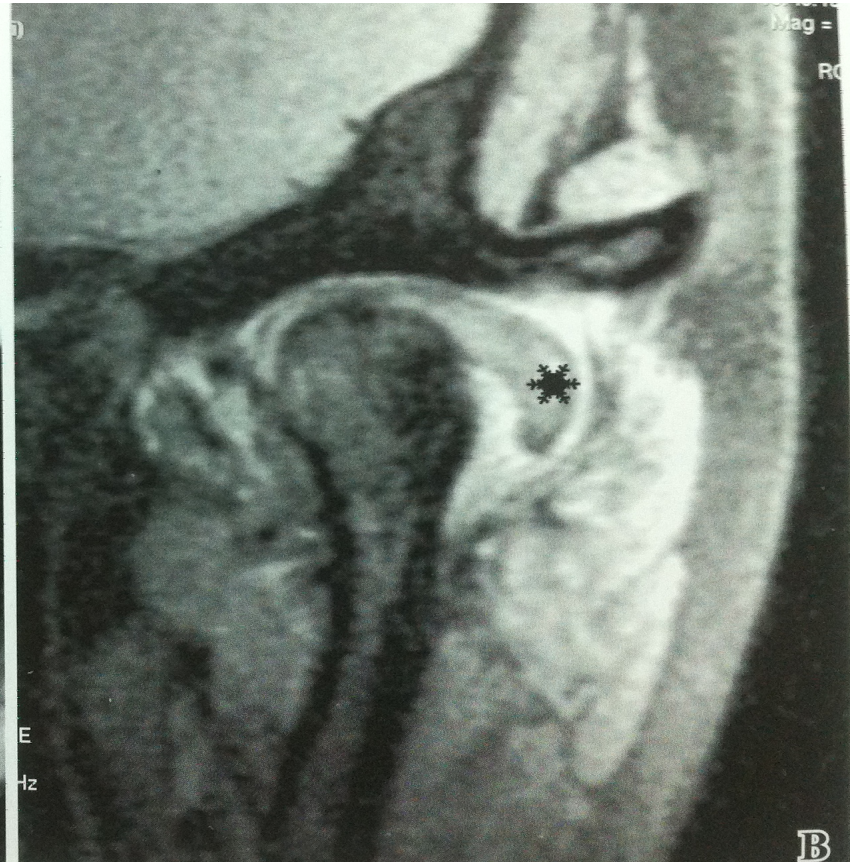
关节盘侧向移位



关节盘旋转移位

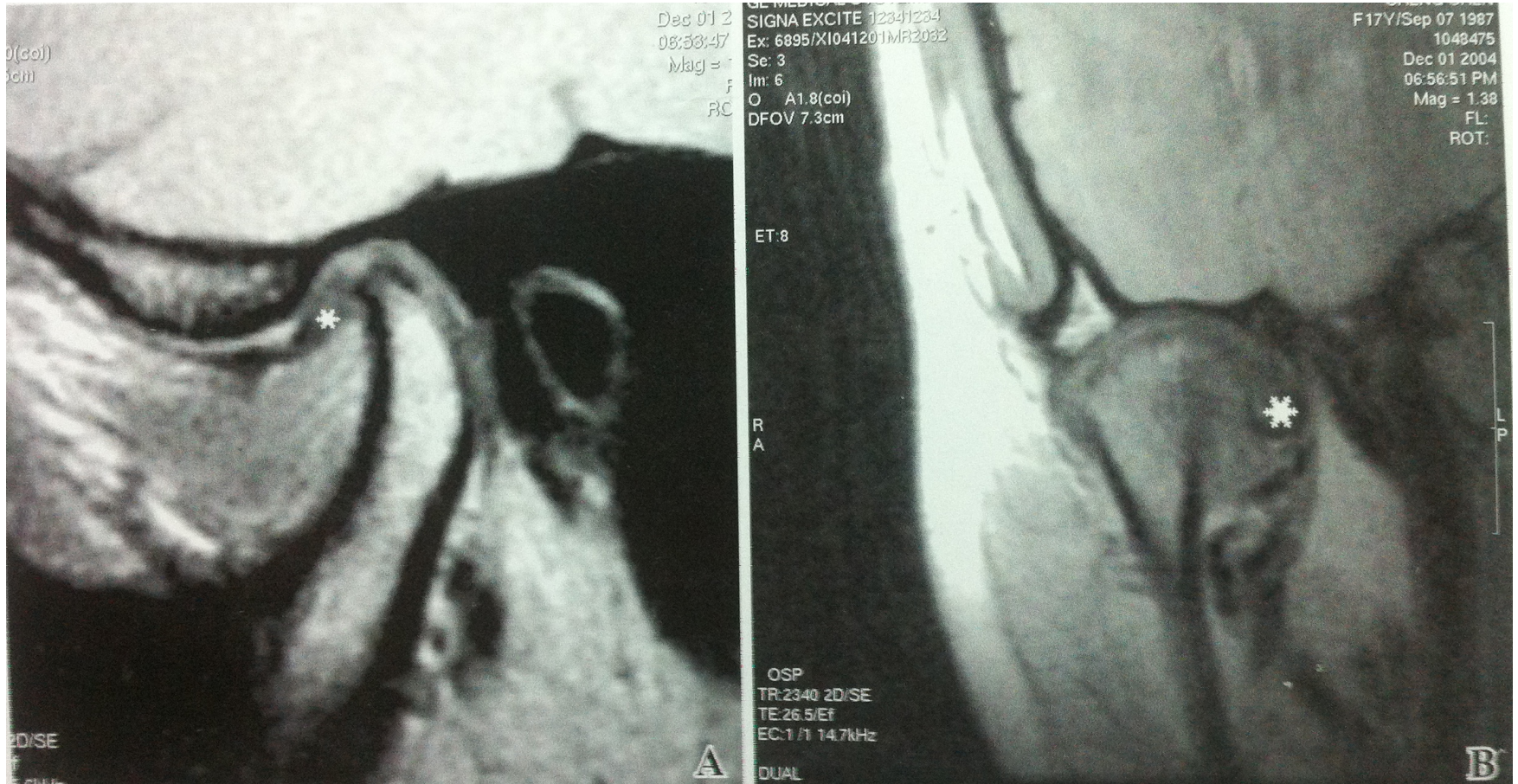


斜矢状位



斜冠状位

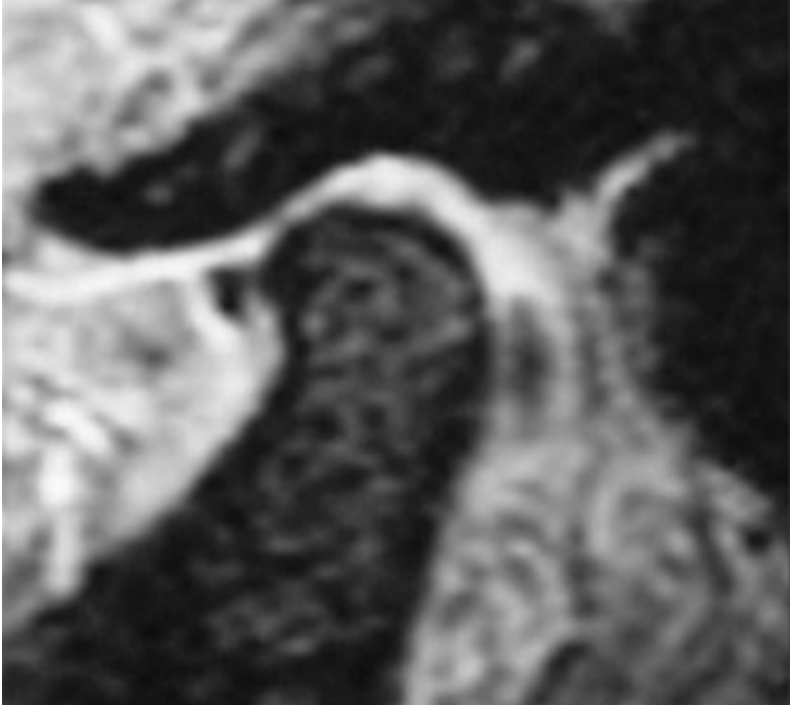
关节盘旋转移位



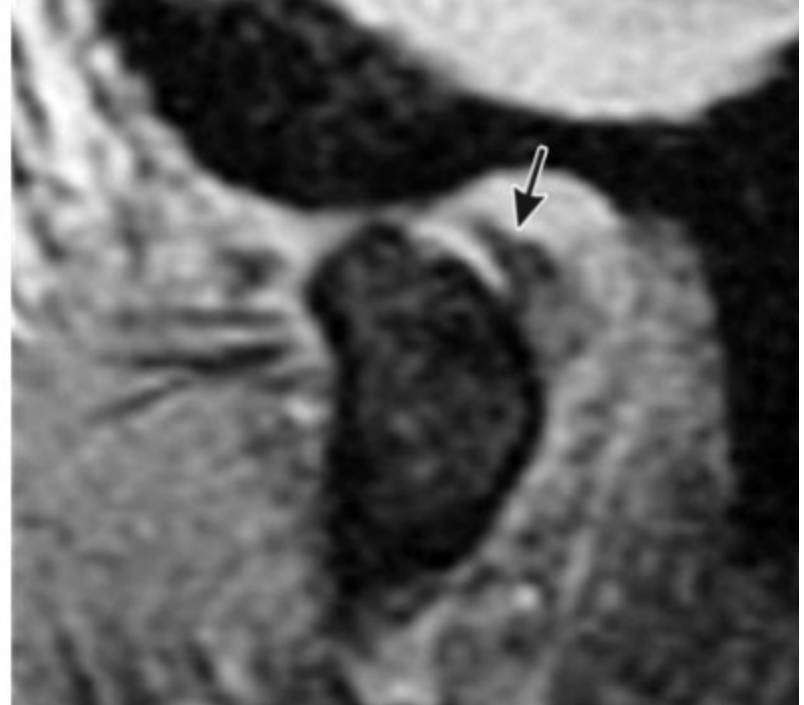
斜矢状位

斜冠状位

关节盘后移位

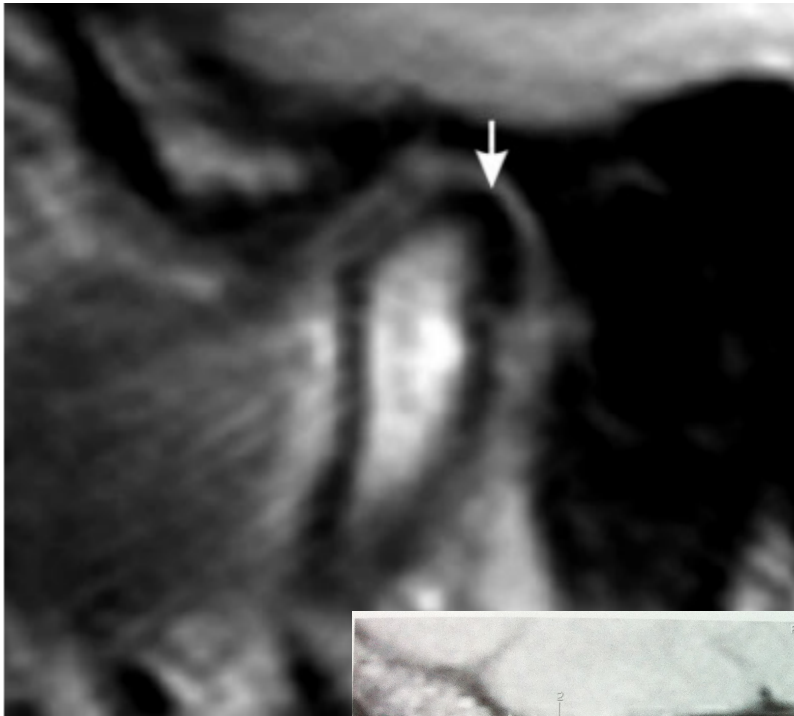


闭口位

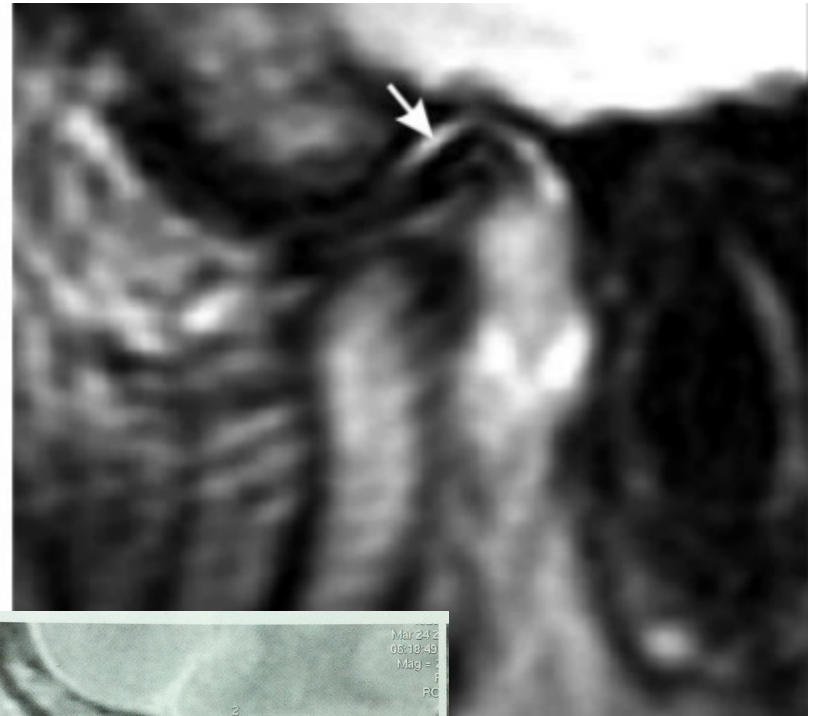


张口位

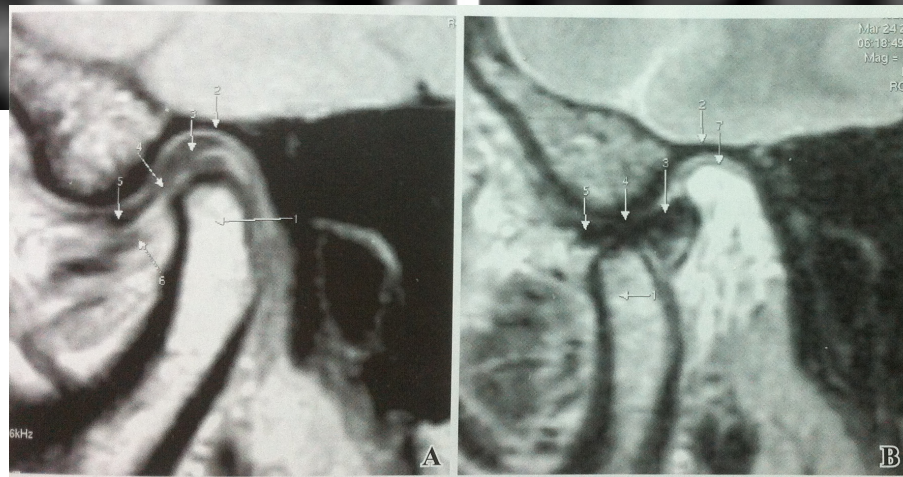
锁颌:不能完全张口或闭口



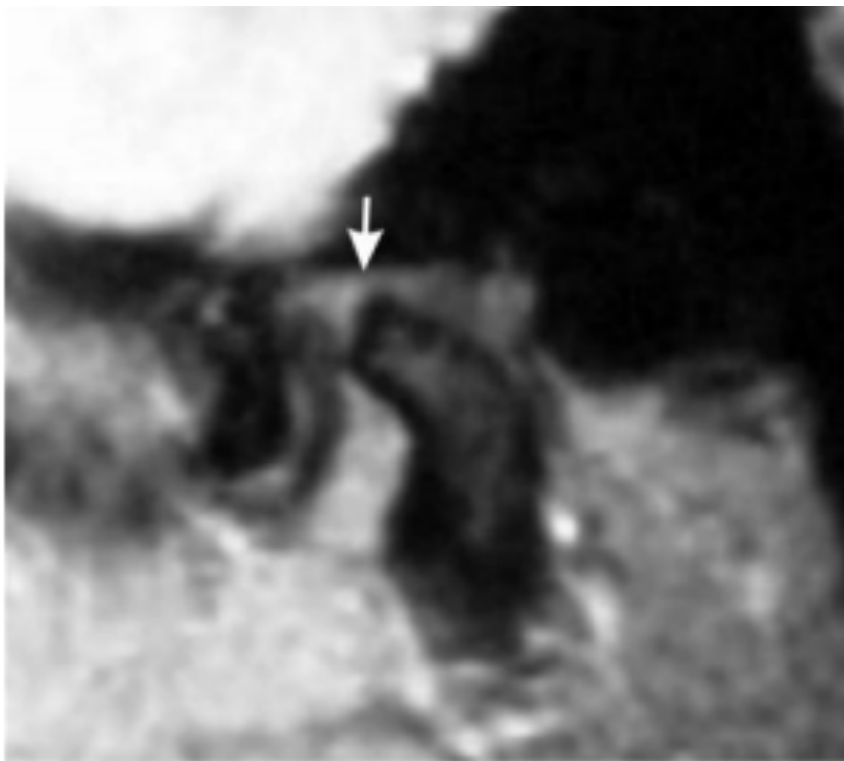
闭口位



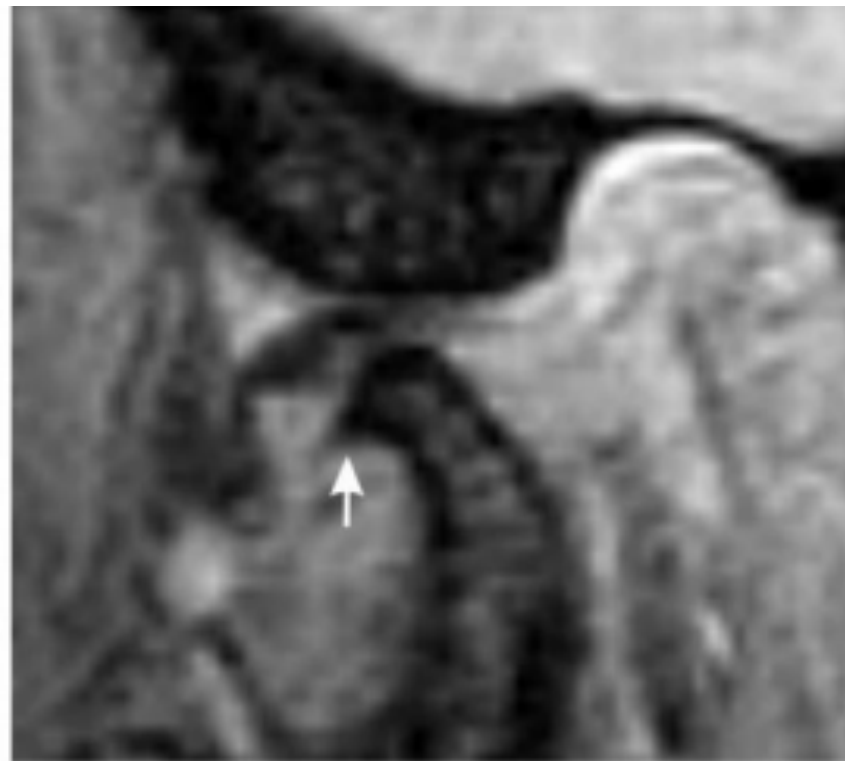
张口位



直接征象：关节骨结构异常

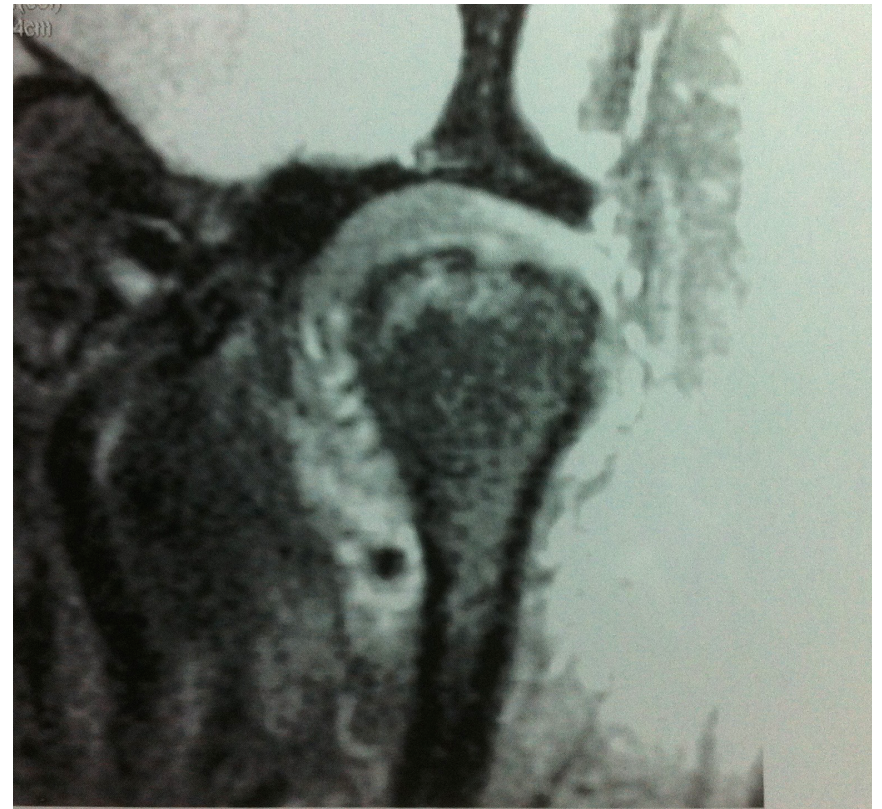
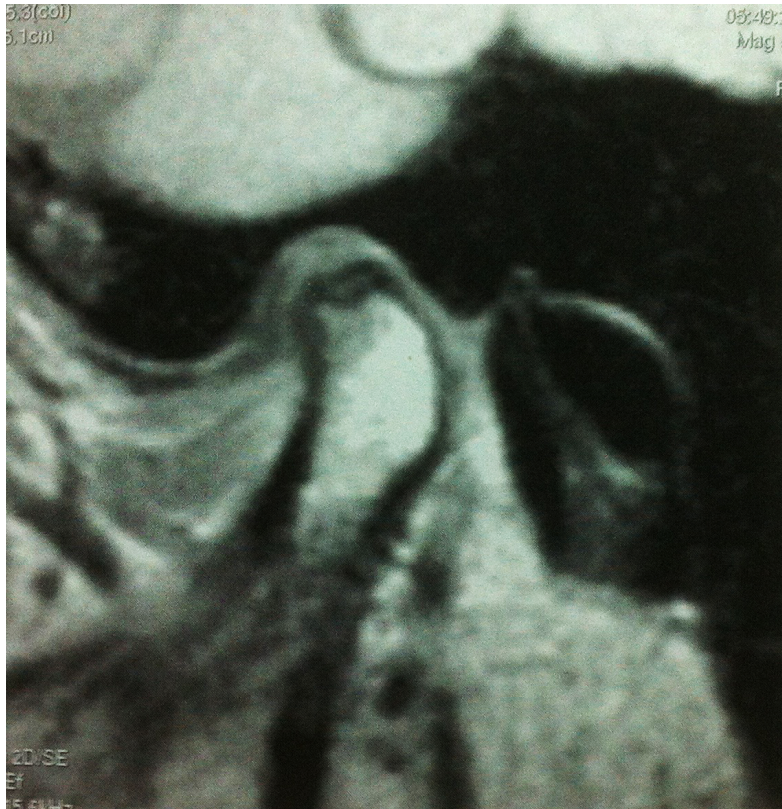


a.



b.

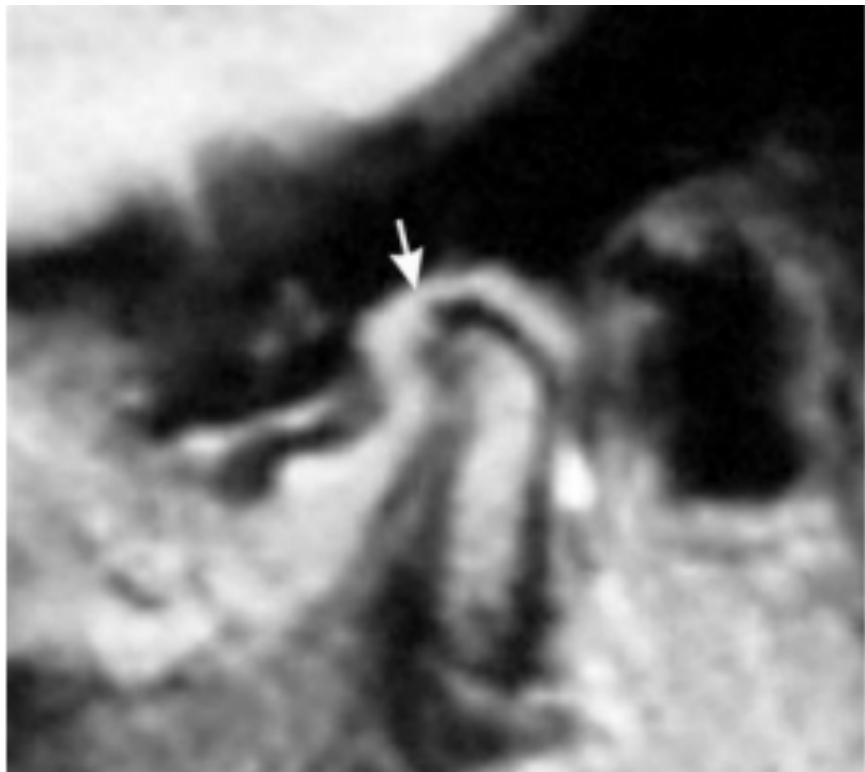
关节骨结构异常



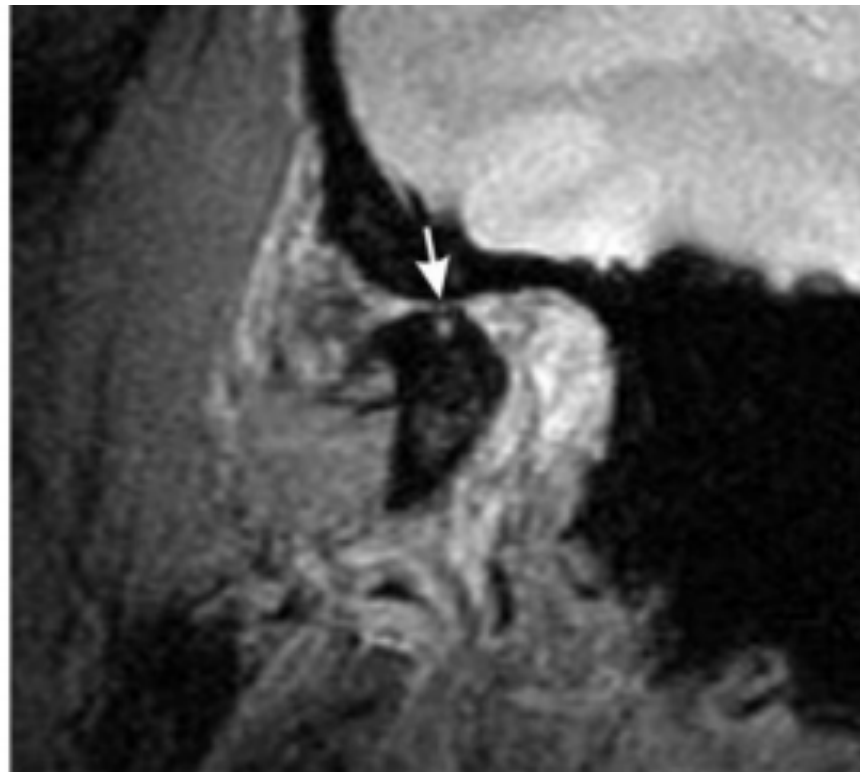
关节骨结构异常



关节骨结构异常



c.



d.

间接征象： 关节腔积液

- 75%： 单纯关节上腔积液
- 2%： 单纯关节下腔积液
- 23%： 关节上下腔同时积液

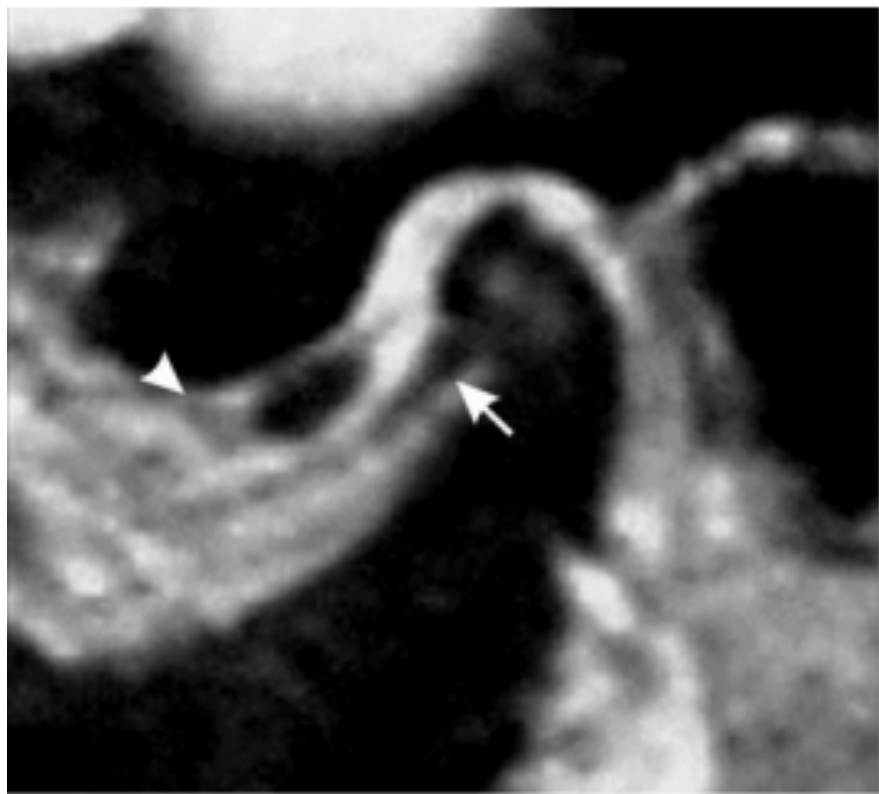
关节腔积液



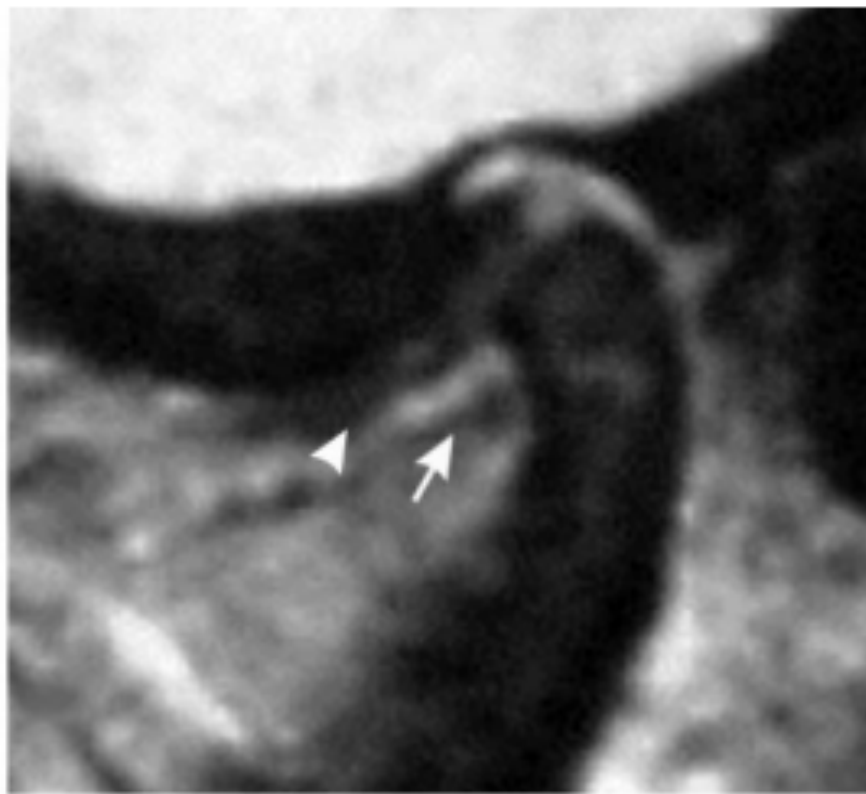
间接征象：翼外肌增厚

1. 正常翼外肌厚度：张口位 $>$ 闭口位
2. 闭口位翼外肌厚度：有症状侧 $>$ 无症状侧
3. 翼外肌下头直径 \propto 关节盘前移程度

翼外肌增厚

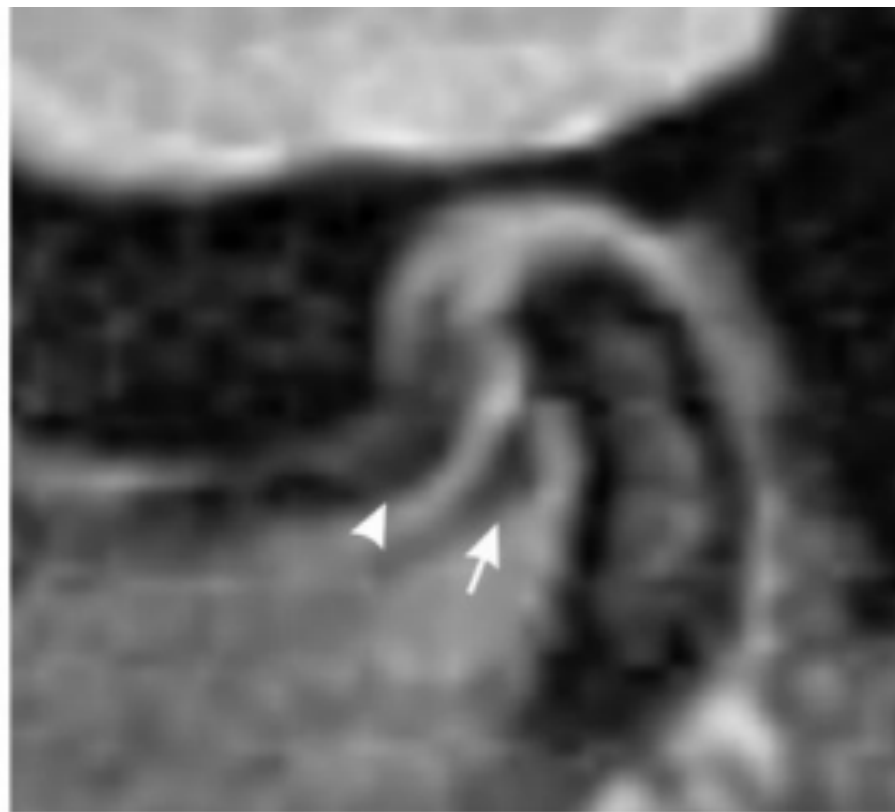
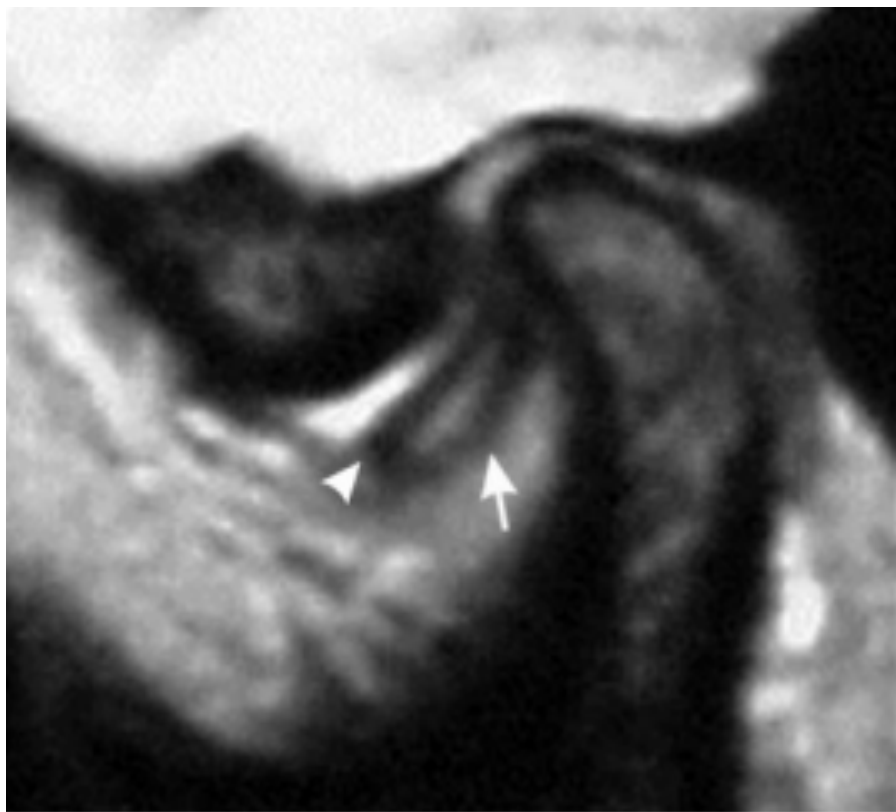


有症状侧

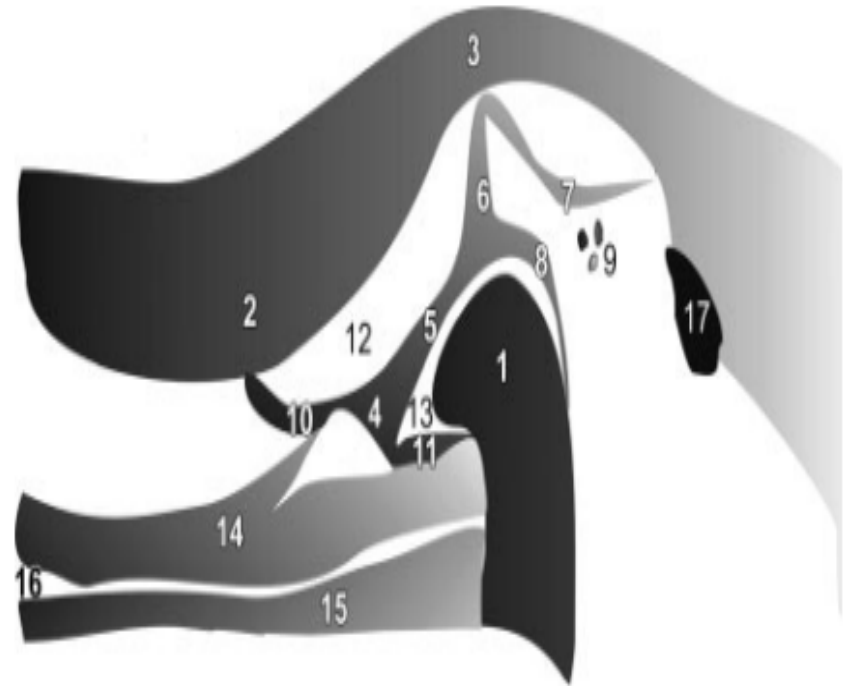
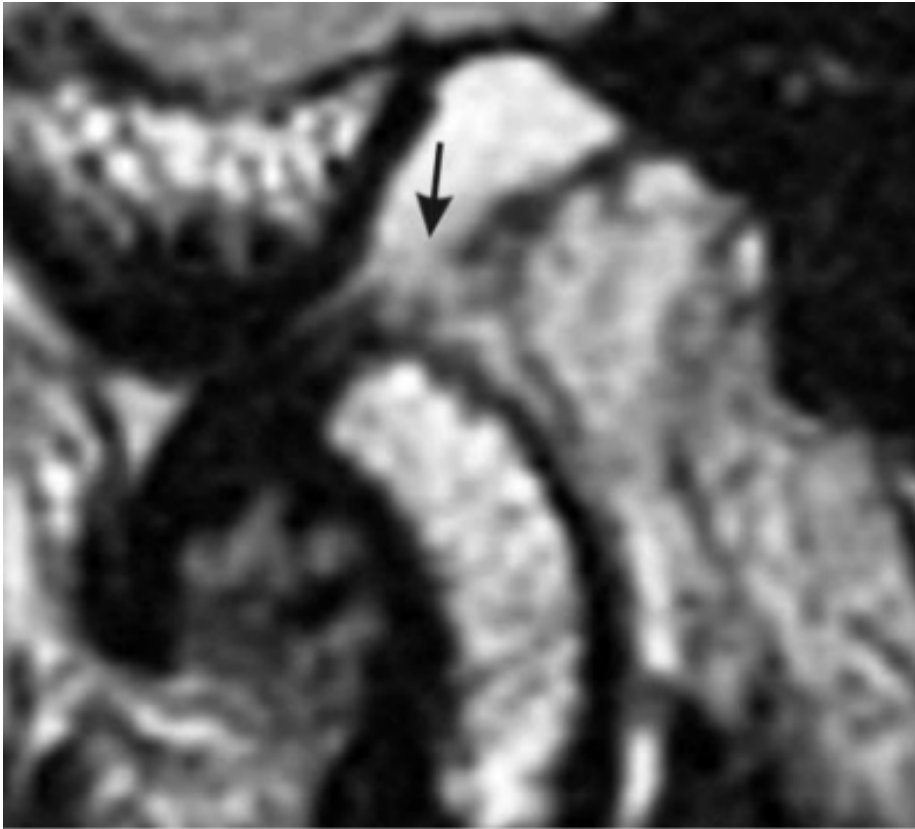


无症状侧

“双关节盘”征



间接征象： 双板区断裂



颞颌关节紊乱的MR直接和间接征象

直接征象

关节盘形态异常

皱缩
变圆
变平
穿通

闭口位关节盘异常移位

前移：最常见，后带超过髁突横嵴垂直线 10° / 30°
后移：罕见，后带超过髁突横嵴垂直线 10° / 30°
内外侧移位

张口位关节盘异常移位

可复性前移
不可复性前移
锁颌

髁突骨结构异常

变平
骨赘
侵蚀
硬化

间接征象

关节渗出
翼外肌增厚
双板区断裂

Direct signs
Abnormal disk morphologic features
Crumpled
Rounded
Flat
Perforated
Abnormal disk displacement in closed-mouth position
Anterior displacement
More frequently observed
Posterior band exceeds 10° (9,18,19) or 30° (20) from vertical
Posterior displacement
Rare
Posterior band exceeds -10° (9,18,19) or -30° (20) from vertical
Lateral or medial displacement
Abnormal disk movement in open-mouth position
Anterior disk displacement with reduction
Anterior disk displacement without reduction
Stuck disk (disk remains fixed)
Osteoarthritic changes of the condyle
Flattening
Osteophytes
Erosion
Sclerosis
Indirect signs
Large amount of joint fluid (joint effusion)
Increased thickness of LPM attachments
Rupture of retrodiskal layers

Note.—Numbers in parentheses indicate reference numbers.

颞颌关节紊乱MR进展过程

- 翼外肌厚度增加
- 闭口位关节盘移位，张口位关节盘可复性移位
- 关节渗出
- 双板区破裂
- 闭口位关节盘移位，张口位关节盘不可复性移位
- 骨结构异常

Table 2
Progression of TMJ Dysfunction as Seen at MR Imaging

Increase in thickness of LPM attachments
Disk displacement in closed-mouth position, disk displacement with reduction in open-mouth position
Joint effusion
Rupture of retrodiskal layers
Disk displacement in closed-mouth position, disk displacement without reduction in open-mouth position
Osteoarthritic changes

谢 谢！