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颞下颌关节上腔囊内粘连的关节镜检查

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[摘要] 目的 探讨囊内粘连与颞下颌关节内错乱(ID)分期以及与患者年龄、张口受限时间及术前张口度之间的关系。方法 选择患有颞下颌关节ID的251例患者的280侧关节进行关节镜检查,观察颞下颌关节囊内粘连的形态及部位,按颞下颌关节上腔九分法分区记录粘连情况,计算各区粘连所占比例和不同粘连级别与ID分期的关系。将~期患者按关节镜检查结果分为粘连组和无粘连组,比较两组患者年龄、张口受限时间和术前张口度的差异。结果 280侧受检关节中,有157侧发生粘连,约占56.07%,其中1级粘连占44.59%,2级粘连占32.48%,3级粘连占7.64%,4级粘连占15.29%。粘连关节在不同ID分期的构成比分别为:处于ID期的37侧关节有4侧发生粘连,占10.81%;处于ID期的121侧关节有59侧发生粘连,占48.76%;处于ID期的41侧关节有31侧发生粘连,占75.61%;处于ID期的81侧关节有63侧发生粘连,占77.78%。ID分期为~期的患者共223例(243侧),其中粘连组为136例(153侧),无粘连组为87例(90侧),两组患者的年龄、张口受限时间和术前张口度均有统计学差异($P < 0.001$)。结论 颞下颌关节上腔囊内粘连发生率较高,多发生于张口受限时间长、张口度小及年龄较大的患者,且内错乱分期愈高,粘连级别愈高。

[关键词] 颞下颌关节; 囊内粘连; 关节镜

[中图分类号] R 782.6 [文献标识码] A

Arthroscopic Diagnosis for Intraarticular Adhesion of Temporomandibular Joint ZHANG Shan-yong, YANG Chi, WANG Xu-dong. (Dept. of Oral and Maxillofacial Surgery, The Ninth People's Hospital, School of Stomatology, Shanghai Second Medical University, Shanghai 200011, China)

Abstract Objective To demonstrate the incidence ratio of intraarticular adhesion (ID), arthroscopic findings of adhesions were evaluated by means of its shape, location and degree. To evaluate the correlation between intraarticular adhesion and the following index, including patients' age, locking duration and interincisal opening preoperatively. **Methods** 280 consecutive arthroscopically examined joints in 251 patients were evaluated. Two surgeons discussed and recorded the shape, location and degree of adhesion nine parts of the temporomandibular joint (TMJ) upper compartment on the chart. The adhesion ratio in different regions and the relation between different grades and ID stages of adhesions were calculated. The patients with ID stage I, II, III, IV, V were divided into two groups, one with adhesion, and the other without. Interincisal opening, locking duration and age were compared between two groups using *t*-test. **Results** Of all 280 joints, 157 joints had adhesions, which accounted for 56.07%. The adhesion of grade 1 accounted for 44.59%, grade 2 for 32.48%, grade 3 for 7.64%, and grade 4 for 15.29%. The proportions of different grades in different stage were as follows. The joints with adhesion in Stage I accounted for 10.81%, Stage II for 48.76%, Stage III for 75.61%, and Stage IV for 77.78%. There were 223 patients who suffered from ID I ~ V. All of 223 patients were divided into the group with adhesion (136 patients) and the other group without adhesion (87 patients). The patients' age, interincisal opening and locking duration between two groups were statistically significant difference ($P < 0.001$). **Conclusion**

Arthroscopic findings confirmed that the incidence ratio of adhesion was high, mainly occurred in the older patients with longer locking duration and less interincisal opening. With the higher stage of ID, the adhesion grades rise.

Key words temporomandibular joint; intraarticular adhesions; arthroscopy

颞下颌关节上腔囊内粘连 (intraarticular adhesions, IA) 是常见的颞下颌关节囊内疾病之一,目前常用的影像学诊断方法尚存在一定的局限性。平片关节造影受投照角度的限制且有放射性,磁共振诊断

的准确率较低¹,而磁共振关节造影虽然诊断准确率较高,但价格较贵且操作技术要求高。关节镜可直观检查粘连的情况,并且可与手术同期完成。本研究采用关节镜检查颞下颌关节 IA,并探讨该疾病与患者张口受限时间、术前张口度及年龄间的关系,为临床治疗提供指导。

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1 材料和方法

1.1 研究对象

选择2001年12月~2003年8月在上海第二医科大学附属第九人民医院口腔颌面外科就诊的颞下颌关节内错乱(internal derangement, ID)患者251例(280侧关节)作为研究对象。其中男48例,女203例;左关节147侧,右关节133侧;患者年龄14~58岁,平均40.15岁;病程3~96月,平均17.73月。ID分期诊断标准参照Wilkes和Bronstein^{2,3}的临床和影像学标准:I期,无疼痛性弹响,无运动障碍,盘轻度前移,前间隙增宽;II期,偶有疼痛性弹响,间歇性锁结,可复性盘前移位,早期盘变形,前间隙增宽;III期,张口受限,咀嚼疼痛,关节区触痛,持续性锁结,不可复性盘前移位,中度盘肥大,前间隙增宽;IV期,可伴慢性疼痛,颌功能有较严重干扰,运动受限,不可复性盘前移位,重度盘肥大,骨结构异常;V期,可伴慢性疼痛,颌功能有较严重干扰,摩擦音,伴有盘穿孔和明显盘变形的盘前移,退行性骨质变化。本研究所有研究对象处于I~IV期,其中ID I期有33例患者37侧关节,II期有108例患者121侧关节,III期有40例患者41侧关节,IV期有70例患者81侧关节。所有研究对象均排除全身性和其他局部疾病后,行关节镜检查。

1.2 试验仪器和器材

Stryker关节镜系统(Stryker公司,美国),关节镜直径为2.3 mm,其外鞘直径为2.8 mm;Sony视频系统(Sony公司,日本)。

1.3 试验方法

采用后上隐窝进路对251例患者的280侧关节进行关节上腔的关节镜检查,按九分法记录粘连情况。关节上腔九分法如图1所示:关节上腔分为9个区域,前上隐窝为Ia区、中间腔为Ib区、后上隐窝为Ic区,II~III区又由外向内分为外、中、内3部分,分别以a、b、c表示。分别记录各个区域粘连的部位及级别,参照杨驰制定的粘连分级标准⁴将粘连情况分为4级:1级为关节盘附着与盘或关节窝之间的细小粘连;2级为关节盘附着与盘或关节窝之间的粗大粘连;3级为盘各带与关节结节之间的粘连;4级为广泛多区域的粘连。将ID为I~IV期的223例患者,按关节镜检查结果分为粘连组和无粘连组,分别记录2组患者的年龄、张口受限时间和术前张口度。

1.4 统计学处理

采用SPSS 11.0进行统计处理,粘连组和无粘连组的比较采用成组设计两样本均数比较的t检验。

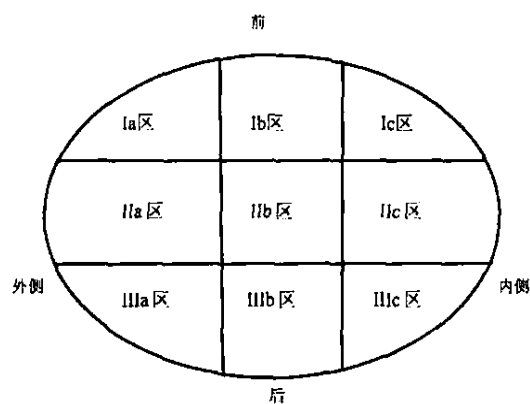


图1 关节上腔九分法

Fig 1 Nine parts of temporomandibular joint upper compartment

2 结果

2.1 关节粘连级别与ID分期关系

关节镜检查结果表明251例患者的280侧关节中,有140例患者的157侧关节有粘连,占所有关节的56.07%(157/280)。1~4级粘连的关节镜下表现分别如图2~5所示。关节粘连级别与ID分期之间的关系见表1。由表1可见1级粘连关节占全部粘连关节的44.59%(70/157),2级占32.48%(51/157),3级占7.64%(12/157),4级占15.29%(24/157)。发生粘连的关节处于ID I期的有4例患者的4侧关节,占10.81%(4/37);处于II期的有50例患者的59侧关节,占48.76%(59/121);处于III期的有31例患者的31侧关节,占75.61%(31/41);处于IV期的有55例患者的63侧关节,占77.78%(63/81)。对关节粘连级别和ID分期进行列联表资料的 χ^2 检验,结果表明粘连级别和ID分期有关($\chi^2=46.54, P<0.01$)。

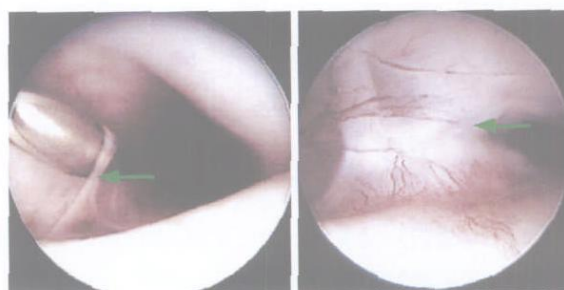


图2 关节1级粘连(左); 关节2级粘连(右)

Fig 2 Grade 1 adhesion of TMJ (left); grade 2 adhesion of TMJ (right)

2.2 粘连带的分布与比例

根据关节上腔九分法记录的各区粘连带的分布情况为:280侧关节的2520个区域中有455个区发生粘连,其中Ia区289个,占63.52%(289/455);Ib区73个,占16.04%(73/455);Ic区83个,占18.24%(83/455)。具体为Ia区99个,占21.76%(99/455);Ib区108个,占23.74%(108/455);Ic区82个,占

18.02% (82/455); a区 26个,占 5.71% (26/455); b区 24个,占 5.27% (24/455); c区 23个,占 5.05% (23/455); a区 26个,占 5.71% (26/455); b区 32个,占 7.03% (32/455); c区 25个,占 5.49% (25/455)。

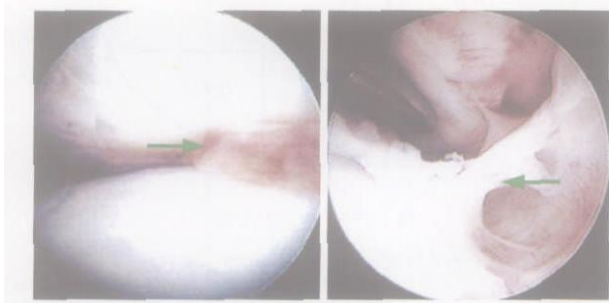


图3 关节3级粘连(左); 关节4级粘连(右)

Fig 3 Grade 3 adhesion of TMJ (left); grade 4 adhesion of TMJ (right)

表1 157侧粘连关节的粘连级别与ID分期的关系

Tab 1 The adhesion of different grades and variable ID stage of 157 adhesive joints

粘连级别	ID分期				合计
	期 (n=37)	期 (n=121)	期 (n=41)	期 (n=81)	
1级	4	36	6	24	70
2级	0	19	17	15	51
3级	0	4	5	3	12
4级	0	0	3	21	24
合计	4	59	31	63	157

2.3 粘连组与无粘连组患者年龄、张口受限时间及术前张口度的比较

颞下颌关节ID为~期的223例患者,经关节镜检查证实粘连组为136例,无粘连组为87例,两组患者的年龄、张口受限时间和术前张口度见表2。由表2可见,3个观察项目在2组间均有统计学差异($P < 0.001$)。粘连组的年龄、张口受限时间均高于无粘连组,而术前张口度则低于无粘连组。

表2 粘连组和无粘连组患者年龄、术前张口度及张口受限时间的比较($\bar{x} \pm s$)

Tab 2 Comparison of patients age, intercisional opening and locking duration between the group with adhesion and the group without adhesion($\bar{x} \pm s$)

观察项目	粘连组 (n=136)	无粘连组 (n=87)	t值	P值
年龄(年)	43.65 ±13.71	36.49 ±15.39	22.67	0.000
张口受限时间(月)	19.28 ±10.19	15.89 ±10.06	4.95	0.000
术前张口度(mm)	24.34 ±6.67	30.26 ±8.47	30.31	0.000

3 讨论

目前对于颞下颌关节IA的分类和分级尚未形成统一的观点,Murakami等⁵按照粘连带的形状将其分为3种类型:膜状粘连;带状粘连;假墙粘连。还有学者按照粘连的形态和部位,将IA分为6种类型,或依据粘连的严重程度分为10级^{6,7}。本研究采用杨驰等制定的分级标准以粘连的形态、大小和部位为主要指标,同时也考虑粘连对患者功能的影响程度,将其分为1~4级,患者张口受限程度越重,级别越高。如位于中间腔处的粘连带,即使仅为带状粘连,但可导致患者明显的张口受限,因此将其定为3级。

本研究选择的251例患者共280侧关节中,经关节镜检查有140例患者的157侧关节有粘连,占所有关节的56.07%。其中1级粘连最多见,占25.00% (70/280);其次是2级粘连和4级粘连,分别为18.21% (51/280)、8.57% (24/280);3级粘连最少,为4.29% (12/280)。而Murakami等⁵报道了68例颞下颌关节ID患者的IA发生率为91.20%,明显高于本研究结果。笔者认为造成这种差别的原因可能是由于选择的研究对象处于不同ID分期的比例不同所致。本研究中ID期最多,占43.21% (121/280),其次为期,占28.93% (81/280);而Murakami的研究以期和期为主,共占44.12%。

关于粘连的发生及形成机理有不同的学说。本研究发现粘连带位于区(关节前上隐窝)最多,占63.52% (289/455),其中又以外中份(a和b)居多,占45.49% (207/455),而区及区较少。其他学者也有类似的结论^{5,8}。关节前上隐窝处于整个关节上腔的最低位置,当存在关节盘的不可复性移位、关节盘折叠变形为形或U形的凹陷时更是如此。关节盘的移位导致盘后附着的滑膜受牵拉,前上隐窝的滑膜受挤压,引起滑膜血管充血、渗出,炎性渗出物汇聚于此,其中的纤维素沉积形成粘连。

本研究将处于ID~期的患者分为粘连组和无粘连组,探讨IA与患者年龄及术前张口度之间的关系。结果发现两组间的张口受限持续时间、术前张口度和年龄均有统计学差异,说明患者张口受限的持续时间愈长、年龄愈大、术前张口度愈小,发生粘连的可能性愈大;而且从临床ID分期和关节镜下粘连级别进行列联表资料的²检验表明二者间有相关关系,ID分期越高越易发生粘连,而且粘连发生的级别也越高。因此临床上对ID患者应尽早治疗,尽可能缩短患者张口受限的持续时间,从而减少粘连的发生,提高治疗效果。

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足深覆^𪗗深覆盖均不是很严重的患者切牙移动的需要,但也不要超过骨皮质界限。对于 Ⅰ型患者,切牙在垂直向和前后向可移动的范围较为宽裕,是4种类型中矫治垂直向和矢状向严重错^𪗗的最理想形态。下颌切牙区颌骨的4个聚类分型形态中,Ⅰ型和Ⅱ型都属“不利”形态。Ⅰ型的切牙不能做较大的压入移动,对深覆^𪗗的矫治不利。Ⅱ型的切牙因根尖离骨皮质板很近,有时甚至紧贴骨皮质板,对矢状向错^𪗗的矫治不利。Ⅲ型和Ⅳ型无论厚度或高度均比Ⅰ型和Ⅱ型形态理想,可视为错^𪗗矫治的较佳形态。

由于不同垂直骨面型间的颅面形态差异较大,且垂直特征与临床治疗及预后的稳定性有密切联系,因此近年来对颅面形态的研究和临床诊治中,均倾向于考虑垂直骨面型特征的影响。本研究将169名研究对象以垂直骨面型分类,考察上下颌切牙区颌骨各聚类分型在不同垂直骨面型中的分布,结果发现正常^𪗗人中,每种垂直骨面型的切牙区颌骨形态包含几种聚类分型。在上颌,高角面型以Ⅰ型为主,均角面型以Ⅱ型为主,低角面型以Ⅲ、Ⅳ型为主。在下颌,高角面型以Ⅰ型为主,均角面型以Ⅱ型为主,低角面型以Ⅲ、Ⅳ型为主。可见均角面型切牙区颌骨的形态以“有利形态”为多,而高、低角面型则以“不利形态”为多。提示高、低角面型均是临床矫治较困难的病例,同时提示在诊断切牙区颌骨形态时,不能只凭垂直骨面型的特征来判断切牙区颌骨的形态,强调个体化的诊断非常重要。

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