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颈阔肌的应用解剖

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提 要 用手术显微镜对50例成人的颈阔肌作了观察和测量。将每侧颈部分为9个区，颈阔肌位于前6区。肌的内侧界约相当于颏舌骨连线中点稍下到锁骨胸骨端稍外侧处的连线，左右侧肌夹有40°角；外侧界为下颌角稍后到锁骨肩峰端内侧3cm处的连线；下界在第一肋间隙平面，有的肌下份出现一些较宽的裂隙；上界在下颌骨体，并与某些表情肌相连续。肌的面积约150cm²，锁骨上部约占120cm²。后份肌纤维略呈S形弯曲。肌与深层结构联系较松。本文还对面神经和颈丛与颈阔肌有关的分支，进行了观察。对和颈面部临床应用等有关的问题进行了讨论。

关键词 颈阔肌；皱纹整形术；面神经

颈阔肌肌质菲薄，与表情肌关系密切，所以国外在皱纹整形术和矫正颈部畸形[1]中已广泛应用；国内张涤生等[2][3]在皮肤提紧术和皮肤扩张术中也提到过用颈阔肌。但有关颈阔肌解剖学的文献报道不多，Castro[4]在50具成年尸体上观察了颈阔肌后份纤维的弯曲及肌前缘在上部交叉的类型；Mitz等[5]在15具新鲜标本上进行了研究，指出腮颊区的浅层肌腱膜系统向下与颈阔肌相连等；李香瑞等[6]对颈阔肌的有关神经有所记述。目前尚未见到国人的颈阔肌资料。为了适应整形外科的临床应用和积累国人资料，我们在50例成人标本上，进行了较为详细的观察。

材 料 和 方 法

50例成年固定标本（整尸24具48侧及单右侧2侧），在手术显微镜下（目镜为10×）解剖颈阔肌的边缘及其与表情肌的延续，解剖其深面的神经，并进行观察、测量和登记。用刻有0.5cm方格的透明塑料薄膜贴于标本上，按1:1的比例，将有关结构移绘于坐标纸上，以利于观察和统计。

观 察 结 果 和 讨 论

一、颈阔肌

（一）颈阔肌的起止：颈阔肌在锁骨下方多起于第一肋间隙（54%）（表1）平面的浅筋膜内，未见达第二肋以下者。在锁骨中点的下方，肌纤维的垂直线长度平均2.71±0.97cm（1.2～4.4cm）。肌纤维起始后，

表1 颈阔肌的起点平面

锁骨		第一肋		第一肋间		第二肋		共计	
例数	%	例数	%	例数	%	例数	%	例数	%
1	2	10	20	27	54	12	24	50	100

向上内行达下颌骨体下缘，由前往后依次：止于下颌骨体下缘；与降下唇肌同一方向，进入降口角肌深面、行向口角；再向后，肌纤维进入笑肌深面的占60%，延续为笑肌的占12%，与笑肌纤维交织的占10%，位于笑肌浅面的占2%，此处标本缺损和未见笑肌的共占16%；更向后肌纤维消失于腮腺筋膜，有的肌纤维向上可达颧弓平面（4%）。

Morris教科书[7]所述该肌起于从第二肋软骨到肩峰的连线。从本文结果看，颈阔肌起点在第一肋间隙平面者较多，未见有达锁骨肩峰端者。从本文所见颈阔肌进入降口角肌深面和多数也进入笑肌深面这一现象看，似乎符合笑肌起源于降口角肌的见解[8]。

（二）肌的前缘和后缘：颈阔肌前缘多数（19/24，79.17%）在舌骨平面之上平均1.69±0.95cm（0.3～3.8cm）处与对侧肌纤维相互交错，即Castro Ⅰ型；少数（4/24，16.97%）在舌骨平面之下平均2.35±1.73cm（0.7～4.7cm）处与对侧交错，即Castro Ⅱ型；左右侧完全不交错者只有1具（4.16%），即Castro Ⅲ型。两侧肌前缘的夹角平均41.74±11.04°（20°～70°）。肌

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前缘在舌骨平面和环状软骨平面距颈中线分别平均为0.73±0.53cm（0.1～1.6cm）和1.19±0.64cm(0.3～3.1cm)。多数(52%)颈阔肌前缘向下行经锁骨胸骨端的外侧平均1.69±1.39cm（0.2～4.4cm）处，少数(30%)行经其内侧平均0.99±0.51cm（0.3～2.1cm）处，18%恰与胸骨端相一致。有时由前缘发出单束肌纤维，向上内行于浅筋膜内。这样，由颏和舌骨连线中点之稍下，到锁骨胸骨端稍外侧处作一连线，大致相当于肌的内侧界。

肌的后缘上端在乳突和下颌角之间，距下颌角平均1.24±0.66cm（0～2.7cm）；在舌骨平面和环状软骨平面距颈中线分别平均为8.42±1.02cm（5.1～9.8cm)和9.17±0.93cm（7.4～11.3cm）；后缘下端在锁骨肩峰端的内侧平均2.78±1.48cm（0.4～9.1cm）处。有时后缘上份有分散的肌纤维伸向后方。这样，由下颌角稍后到锁骨肩峰端内侧约3cm处作一连线，大致相当于肌的外侧界。

一般教科书都记载颈阔肌前上份左、右侧肌纤维相互交错，但未见有夹角的大小。Castro统计Ⅰ、Ⅱ、Ⅲ型分别占75%、15%、10%，也以Ⅲ型为少见。Souther[9]在颏颈角变钝时行颏下脂肪切除，或颈部出现松弛的纵行纤维索时，如为Ⅲ型颈阔肌，缝合双侧肌前缘，可能得到纠正。

（三）肌纤维的弯曲和裂隙：我们分别连接同侧下颌体中点和锁骨中点、下颌角和锁骨肩峰端作两条纵线，加上舌骨平面和环状软骨平面两条横线，把每侧颈部分为九个区（图1）。在前中区和中中区，颈阔肌纤维比较密集；向上则略为稀疏且呈凸向后的弯曲，在下颌角处尤为明显；由前中区和中中区向下，肌纤维变得分散和稀疏，有的肌下缘出现一些裂隙，如同缴状。肌裂隙出现在锁骨以上者有20例，其中有两处裂隙者8例，有一处和多处裂隙者各6例。裂隙多在前下区，少数在中下区（3个）；裂隙多呈尖向上的三角形，少数为梭形（3个）和柱状（1个）；裂隙在锁骨上缘处的宽度平均为1.01±0.58cm（0.3～2.6cm），锁骨以上的高度平均3.36±1.30cm（1.4～6.7cm）。由于中下区（有时还有后下区）的肌纤维向外侧行，所以此处的肌纤维多呈凸向前的弯曲，这样，加上肌上份纤维的弯曲凸向后，使后份肌纤维呈明显的S形。有一例肌纤维不很发达，整个颈阔肌的宽度在锁骨处仅为2.1cm。颈阔肌与深层结构联系较松，因而在解剖时很容易把颈阔肌与深层结构分离。

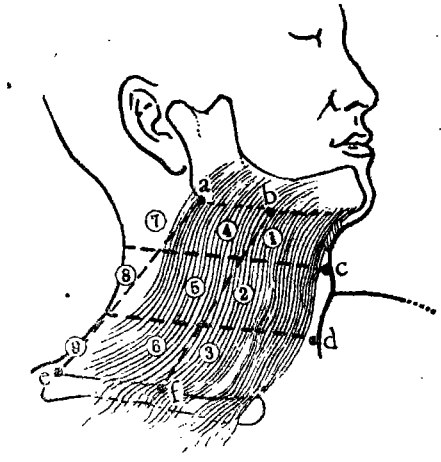


图1　颈部的分区

a、下颌角　b、一侧下颌骨体中点　c、舌骨　d、环状软骨　e、锁骨肩峰端　f、锁骨中点　1.前上区　2.前中区　3.前下区　4.中上区　5.中中区　6.中下区　7.后上区　8.后中区　9.后下区

颈阔肌上份呈凸向后的弯曲，向上和部份表情肌又相延续，二者可能形成一个功能单位[10]，随年龄增长，可拉口角和面下部皮肤向下，形成皱纹，故横切颈阔肌并将肌向后上旋叠，可进行皱纹整形。由于颈阔肌与深层结构联系较松，即Mitz等指出的安全解剖层，故在颈部行皮肤扩张术较为容易。Suzuki等[11]提到在进化过程中，颈阔肌的

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前份在高等哺乳类比较发达，而后部则退化；本文结果该肌下份肌纤维稀疏，有的出现裂隙，似乎符合这一情况。

（四）肌的面积：在每侧颈部的前六个区内都有肌纤维，后上区94%有肌纤维，后中区42%、后下区24%有之。锁骨以上颈部颈阔肌的面积平均121.32±19.98cm²（74～167cm²），锁骨以下的部份平均27.11±11.84cm²（8～57cm²），二者合计为148.43 cm²

颈前外侧部的皮肤，一般不易和颈阔肌分开，在前述相当于颈阔肌内侧界和外侧界的范围内切取皮瓣，一般能带有颈阔肌，形成颈阔肌肌皮瓣。肌皮瓣的血供丰富，易于成活。文献中尚未见到颈阔肌面积的资料。

二、与颈阔肌有关的神经

颈阔肌深面有面神经下颌缘支、颈支和颈丛的颈横神经、锁骨上神经。其中面神经的颈支为颈阔肌的运动神经。

（一）面神经下颌缘支：在后上区的颈阔肌深面，50例中46%面神经下颌缘支走行于下颌角上方平均0.66±0.25cm（0.1～1.1 cm）；36%恰与下颌角平齐，18%行于下颌角之下平均0.58±0.15cm(0.3～0.7cm)处。下颌缘支向前行于面动脉浅面者占80%，行于面动脉深面者占4%，下颌缘支分为二支，经动脉浅、深面各一支者占14%，下颌缘支呈弓形不与面动脉交叉者2%。下颌缘支在下颌角平面处的宽度平均为1.24±0.37 mm（0.73～2.73mm）。

本文结果和国内资料[12]面神经下颌缘支行于下颌角（或下缘）下方者都占少数，而且距下颌下缘都在0.75cm范围内。由于下颌缘切口较为常用，下颌缘支关系口角平衡，如不慎损伤，对功能和面容影响较大。故下颌缘切口宜在下颌缘之下1cm之下进行，较为安全。下颌缘支位于安全解剖层的深面，揭起颈阔肌时，如细心操作，是可以避免损伤该支的。

（二）面神经颈支：颈支行于下颌角之后平均0.70±0.37cm处，绕下颌下腺的后下缘，行向舌骨。颈支一般分二小支(90%)或三小支（10%），分别行向前上区和向下与颈横神经交通。颈支在下颌角平面的宽度平均1.26±0.37mm（0.45～2.2mm）。采取颈阔肌肌皮瓣时，宜根据面神经颈支的位置并加以保存，增进移植组织的活力，减少皮肤下垂。

（三）颈横神经：为颈丛的分支，多数为一支，少数（10%）为二支，由中中区向前行，与面神经颈支交通后穿过颈阔肌肌质，抵达皮肤。颈横神经在与颈外静脉相交处（或神经根部与颈外静脉接近处）(下同)的宽度平均为1.68±0.52mm（0.9～2.9 mm）。李香瑞等的结果二支颈横神经的出现率（26%）比本文高，宽度近似（1.7 mm）。Hurwitz[13]曾用颈横神经与颏下神经缝合，以恢复唇部感觉。

（四）锁骨上神经：有内侧、中间、外侧三支。在中下区和前下区的锁骨上窝处，锁骨上神经、颈外静脉、颈横动脉的颈阔肌支，在结缔组织中常互相交织。内侧支多为一支，只有4例为二支，宽度平均1.35±0.42mm（0.72～2.5mm）。中间支为一支的占90%，宽度平均1.84±0.46mm(0.72～2.9mm)，有二支中间支者占8%，另1例（2%）分别由内侧支和外侧支发出的细支代替中间支。有1例的中间支穿过锁骨而达皮下。外侧支只有1例为二支，其余均为一支，宽度平均为1.53±0.47 mm（0·9～3 mm）。Morris[14]指出锁骨上神经的中间支往往是三支中最粗大的一支，与本文结果一致。他还指出锁骨上区的两点辨别触觉平均为20mm，手术时切断锁骨上神经引起的感觉迟钝，不是大问题。Conley[15]提出切取包括4～5支感觉支的一段颈丛作为移植体，与面神经近端缝接，95%的病例面部可出现某种程度的运动，但额肌和颈阔肌的运

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动较弱。

总之，颈阔肌虽是一片皮肌而常不被重视，随颈面部整形术的开展，对其形态结构的知识，日趋重要，本文所提数据，可供临床参考。

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multivalent serum of Reovirus type 1—3.

(5) The E6 cells infected by CPE strains of virus can almost fully absorb the specific antibodies in EHF patients or in EHF and KHF antisera.

(6) The suspension of the mouse brain infected by CPE strains can form positive agglutination reaction with the sentitized blood cells by EHF virus strain A9 McAb 25-1.

On the basis of our observation, it can be concluded that at least certain strains of EHF virus can produce CPE in Vero-E6 cell culture.

Key words: Epidemic hemorrhagic fever virus; Cytopathogenic effect; Vero-E6 cell

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Determination of DNA content in Different Human Lung Cancers with Microspectrophotometer

Wang Dengshun, et al (Department of Pathology, Third Military Medical College)

The DNA contents of 39 surgically resected specimens of different histopathological kinds and types of human lung cancer were determined with microspectrophotometer. Among them, 3, 6, and 5 cases were diagnosed as well, moderately and poorly differentiated squamous cell carcinoma; 3, 5, and 5 as well, moderately and poorly differentiated adenocarcinoma; and 3 and 6 cases as large and small cell types of undifferentiated carcinoma respectively.

It was found that the DNA contents of different histopathological kinds and types of lung cancers were significantly different($P<0.01$). The histograms of various kinds and types of lung cancers based on the values of DNA contents were also different.

On the basis of this study, it is suggested to make more precise classification of human lung cancers according to the DNA contents, and the histograms of the DNA contents of lung cancers are helpful in the identification of the pathological kinds and types of the cancers.

Key words: DNA; Microspectrophotometer; Human lung cancer; Pathology; Quantification

(p.143)

Applied Anatomy of the Platysma

Cheng Gengli, et al (Department of Anatomy, Third Military Medical College)

The platysma of 50 sides of abult cadavers were studied under operating

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microscope. 9 areas are divided on each side of the neck, and the anterior 6 of the 9 are occupied by the platysma. The medial border of the muscle corresponds to a line starting from the middle point of the mental-hyoid line and ending laterally to the sternal end of the clavicle. The angle formed by the medial borders of the platysmas of two sides is about 40. The lateral border corresponds to a line starting from a little back of the angle of the mandible and ending 3 cm medial to the acromion end of the clavicle. The inferior border of the platysma lies in the first intercostal space. There are several gaps in the lower portion of some of the muscles. The superior border attaches to the body of the mandible and fuses with some of the expression muscles. The area of the platysma is about 150cm^2, of which about 120 cm^2 are located above the clavicle. The fibers of the posterior portion of the muscle are in the form of a double curve. The platysma is loosely attached to the underlying structures.

Several branches of the facial nerve and the cervical plexus were also studied. In addition, certain problems concerning the plastic reconstruction on the neck and face were discussed.

Key words: Platysma; Rhytidoplasty; Facial nerve

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Acute Respiratory Failure after Esophageal Carcinoma Operations

Jiang Yaoguang, et al (Department of Thoracic Surgery, Third Teaching Hospital, Third Military Medical College)

Twenty-four cases out of 374 cases having operations to resect carcinoma of the esophagus developed respiratory complications. 16 cases of the 24 developed acute respiratory failure, of which 8 cases died. The contributing factors to the development of acute respiratory failure were operative hypotension, extensive trauma and long duration of the operation, aspiration through a cervical fistula, and infection of the thoracic cavity. Prevention of these complications from occurring can definitely decrease the incidence of acute respiratory failrue, and is also one of the important links to reduce the mortality of the operations to resect esophageal carcinoma.

Key words: Acute respiratory failure; Esophageal carcinoma operation

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