



doi:10.7659/j.issn.1005-6947.250337

<http://dx.doi.org/10.7659/j.issn.1005-6947.250337>

China Journal of General Surgery, 2025, 34(11):2361-2367.

·专题研究·

腔镜下男性乳腺切除术的临床效果及经验总结：附17例报告

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摘要

背景与目的: 男性乳腺发育症是一种常见的良性乳腺疾病, 可导致乳房外形异常和心理负担加重。腔镜下乳腺切除因切口隐蔽、视野清晰及美容效果佳, 逐渐成为重要术式。本研究旨在总结腔镜下男性乳腺切除的手术要点、并发症发生情况及随访疗效。

方法: 回顾性分析2023年5月—2025年2月行腔镜下男性乳腺切除的17例患者的一般资料、手术方式、术后并发症及满意度。记录手术时间、术中出血量、术后前3 d引流量、拔管时间及住院时间; 依据BODY-Q胸部模块评价术后满意度; 随访3~24个月。

结果: 全部手术顺利完成, 无中转及严重并发症。单侧手术时间(69.88 ± 14.23) min, 术中出血量(22.38 ± 10.69) mL。术后1、2、3 d单侧引流量中位数分别为28.00(14.00~57.50) mL、17.50(15.00~24.75) mL、14.00(7.75~24.75) mL。拔管时间(6.50 ± 1.66) d, 术后住院时间5~10 d。病理均为良性(15例男性乳腺发育症, 2例纤维脂肪增生)。术后并发症包括皮肤青紫3例(17.6%)、皮下血肿1例(5.9%), 均自行好转或经处理痊愈。无乳头凹陷、皮瓣坏死、感觉障碍或双侧不对称。随访中无残余腺体及复发。所有患者满意度评分均>3, 美容效果显著。

结论: 腔镜下男性乳腺切除术安全、微创、并发症发生少, 切口隐蔽且美观度高, 患者满意度良好, 是值得推广的手术方式。

关键词

男性乳腺发育; 乳房切除术; 内窥镜; 手术后并发症

中图分类号: R655.8

Clinical outcomes and experience of endoscopic mastectomy for gynecomastia: a report of 17 cases

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Abstract

Background and Aims: Gynecomastia is a common benign breast condition in males that may cause abnormal breast contour and psychological distress. Endoscopic subcutaneous mastectomy has gradually become an important surgical option due to its concealed incision, clear operative field, and superior

基金项目: 内蒙古自治区自然科学重点基金资助项目(NJZZ21027); 内蒙古民族大学附属医院博士启动基金资助项目(IMUN1H20240101)。

收稿日期: 2025-06-16; **修订日期:** 2025-08-13。

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cosmetic outcomes. This study aimed to summarize the key operative techniques, postoperative complications, and follow-up outcomes of endoscopic mastectomy for gynecomastia.

Methods: A retrospective analysis was conducted on 17 patients who underwent endoscopic mastectomy for gynecomastia between May 2023 and February 2025. General information, surgical procedures, postoperative complications, and satisfaction results were reviewed. Operative time, intraoperative blood loss, drainage volume during the first three postoperative days, time to drain removal, and length of hospitalization were recorded. Postoperative satisfaction was evaluated using the BODY-Q chest module. Follow-up lasted 3-24 months.

Results: All procedures were successfully completed without conversion or major complications. The mean unilateral operative time was (69.88 ± 14.23) min, and intraoperative blood loss was (22.38 ± 10.69) mL. The median drainage volumes on postoperative days 1, 2, and 3 were 28.00 (14.00-57.50) mL, 17.50 (15.00-24.75) mL, and 14.00 (7.75-24.75) mL, respectively. The mean time to drain removal was (6.50 ± 1.66) d, and postoperative hospital stay was 5-10 d. All pathological results were benign (15 cases of gynecomastia and 2 cases of fibrofatty hyperplasia). Postoperative complications included skin bruising in 3 patients (17.6%) and subcutaneous hematoma in 1 patient (5.9%); all resolved spontaneously or with simple treatment. No nipple retraction, skin-flap necrosis, sensory disturbance, or breast asymmetry was observed. No glandular residue or recurrence occurred during follow-up. All patients achieved satisfaction scores above 3, indicating excellent cosmetic outcomes.

Conclusion: Endoscopic mastectomy for gynecomastia is safe, minimally invasive, and associated with a low rate of complications. Its concealed incision and favorable aesthetic results yield high patient satisfaction, making it a technique worthy of wider clinical adoption.

Key words Gynecomastia; Mastectomy; Endoscopes; Postoperative Complications

CLC number: R655.8

男性乳腺发育症是继发乳腺导管和基质成分增殖而形成的一种常见的乳腺良性疾病^[1-2]。由于男性乳腺发育通常无法通过观察或保守治疗得到根治，往往会给患者带来较为严重的焦虑、抑郁等负面影响，必要的手术干预可以改善乳房外形，提升患者自信^[3-4]。传统的开放手术通常会给患者留下明显的手术瘢痕^[5]。近年来，伴随腔镜下男性乳腺切除技术的开展，在隐蔽切口等方面取得了良好的效果^[6-8]。本文回顾性分析内蒙古民族大学附属医院2023年5月—2025年2月，行腔镜下男性乳腺切除17例患者的临床资料，报告如下。

1 资料与方法

1.1 一般资料

本组患者均为男性，年龄跨度在18~58岁，平均 (45.40 ± 15.17) 岁，发病时间为3~10年。临床表现主要以单侧或双侧乳腺组织增大或伴有局灶

性疼痛为主要特征。其中13例为单侧（左侧7例，右侧6例），4例为双侧，伴有乳房疼痛8例。根据Simon等^[9]对乳腺发育的分级：I级，腺体轻度肥大，无皮肤增多；IIA级，腺体中度肥大，无皮肤增多；IIB级，腺体中度肥大，伴皮肤增多；III级，腺体重度肥大，伴皮肤增多。本组病例中男性乳腺发育者IIB级12例，III级5例。体格检查均可触及女性发育样增生肥大的腺体，质地韧，表面光滑，边缘欠清晰。所有病例均于术前常规检查性激素6项以及垂体MRI，未发现异常；乳腺B超检查均考虑男性乳腺发育症，腺体样回声范围最大者5.0 cm × 4.9 cm，最小者1.7 cm × 0.95 cm。本研究通过内蒙古民族大学附属医院伦理委员会审批（批号：NM-LL-2023-10-15-09）。

1.2 手术指征

本组患者符合以下情况中的一种或几种为有手术指征：(1)乳房腺体过大影响患者正常生活和社会情况，从而导致患者产生自卑情绪或给患者

带来心理障碍的。(2)存在乳腺触痛,且经过药物保守治疗效果不明显的。(3)怀疑有恶变的。(4)患者对乳腺外形有美学要求的。

1.3 手术方法

标记及建腔:患者取仰卧位,气管插管全身麻醉方式。手臂外展,用蓝色标记笔标记乳腺外缘,于腋窝(腋前线、腋后线间)取一约4 cm长切口(图1A),电刀从切口边缘向内下游离约3 cm至乳房后间隙,建立初步腔镜视野,置入一次性切口保护套,连接Triport(图1B)。建立CO₂气腔,压力为8 mmHg(1 mmHg=0.133 kPa),流速为20 L/min。深层游离:关闭手术灯光,腔镜下电凝钩从乳房后间隙,沿胸大肌筋膜表面游离至术前乳腺标记边缘(图1C),期间需注意保留胸大肌筋膜。浅层游离:制备溶脂液(灭菌注射用水200 mL、生理盐水200 mL、2.0%的盐酸利多卡因20 mL、

0.1%的肾上腺素1 mL)。经上述切口由外至内呈扇形逐一对乳房浅层注入250~300 mL溶脂液至标记边缘,等待15 min后用3 mm钝头吸脂针进行吸脂。然后进行腺体浅筋膜浅层游离(图1D),当电凝钩游离皮下结缔组织及暴露的Cooper韧带时,以小脂肪颗粒为目标层面进行游离,适当保留大颗粒脂肪,直至术前标记的位置。游离完毕,撤去Triport,从套筒内取出腺体(图1E),探查止血后用生理盐水反复冲洗创面至清亮液为止。置管固定:手术结束时,需在一侧乳房放置上、下2根胶体引流管,固定引流管后逐层缝合(图1F)。在纱布中央剪出圆洞,便于乳头暴露,避免受压坏死,在乳房上放置敷料加压消除无效腔,并建议患者佩戴弹力胸带3个月。术后观察记录引流量及引流液的性质、颜色,当引流量<10 mL时可拔除引流管。

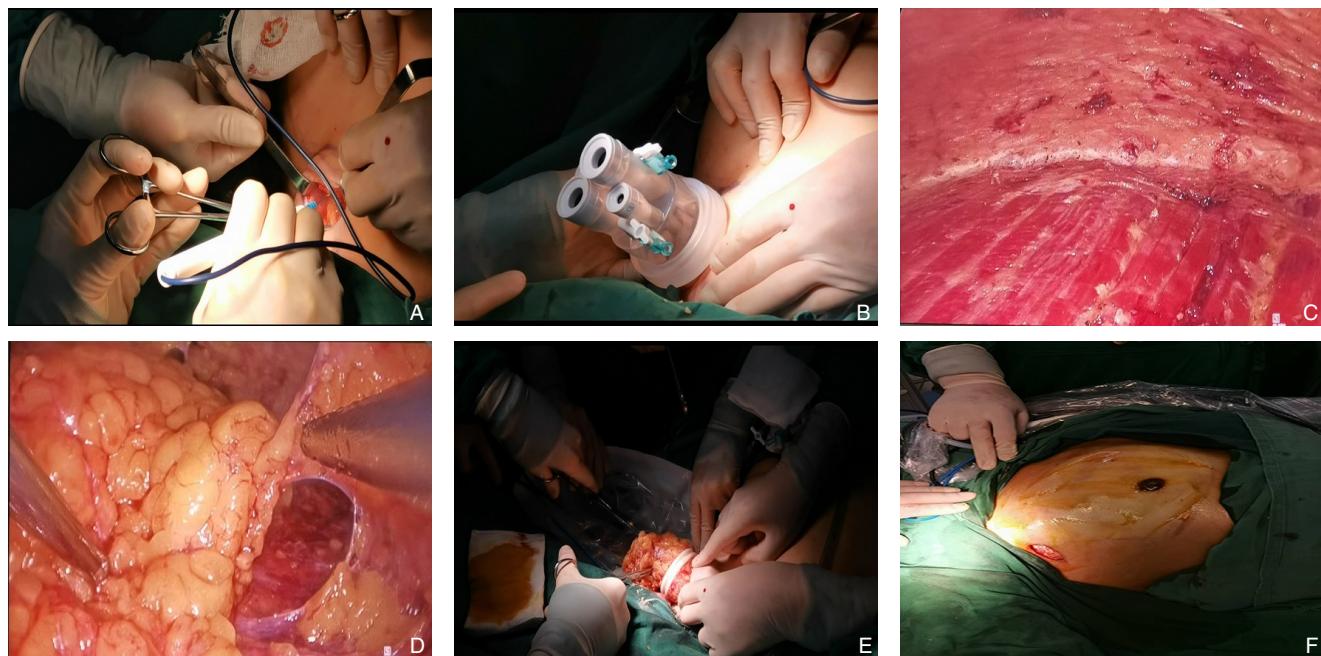


图1 术中照片 A: 术中切口; B: 连接Triport; C: 游离乳房后间隙; D: 腺体浅层游离; E: 套筒中取出腺体; F: 术毕准备缝合

Figure 1 Intraoperative photographs A: Axillary incision; B: Triport connection; C: Dissection of the retromammary space; D: Superficial glandular dissection; E: Removal of the glandular tissue through the sleeve; F: Closure preparation at the end of surgery

1.4 观察指标

记录患者围手术期临床指标及相关并发症,包括单侧手术时间、术中出血量、术后前3 d的引流量、术后拔管时间、术后住院时间、皮肤青紫、皮下血肿、乳头凹陷、乳头乳晕复合体坏死、乳头感觉障碍、双侧乳房不对称等;满意度以

BODY-Q胸部模块问卷打分评估^[10],包括胸部轮廓均匀度、对称性、感觉、瘢痕和整体满意度五个项目,每个项目评分为1~4(不满意1;一般2;满意3;非常满意4),得分越高表示满意度越高。

1.5 统计学处理

采用SPSS 26.0软件进行数据分析,符合正态

分布的计量资料，以平均数±标准差 ($\bar{x} \pm s$) 表示，不符合正态分布的计量资料，以中位数(四分位间距) [M (IQR)]表示，计数资料以例数(百分比) [n (%)]表示。

2 结 果

2.1 围手术期情况

本组手术均获成功，未发生严重术中、术后并发症，无中转病例。单侧乳腺切除的手术时间为50~95 min，平均 (69.88 ± 14.23) min；术中出血量10~45 mL，平均 (22.38 ± 10.69) mL；术后1、2、3 d单侧中位引流量分别为28.00 (14.00~57.50) mL、17.50 (15.00~24.75) mL、14.00 (7.75~24.75) mL；术后拔管时间5~10 d，平均 (6.50 ± 1.66) d，术后5~10 d后出院。

2.2 术后病理及并发症情况

17例患者术中快速病理回报切除的腺体标本均为良性，无恶性病变。在术后常规病理诊断中，其中有15例确诊男性乳腺发育症（其中有1例伴导管扩张），2例确诊为纤维脂肪组织增生。术后3例（17.6%）出现皮肤青紫，经适当松解胸带后好转，逐渐恢复正常肤色，均未出现皮瓣坏死。1例（5.9%）出现皮下血肿，经穿刺抽液及绷带加压包扎后痊愈。所有患者均未发生皮下气肿、血清肿、乳头凹陷、乳头乳晕复合体坏死、乳头感觉障碍等相关并发症（表1）。所有患者伤口均为I期愈合。



图2 患者手术前后胸部外观

Figure 2 Preoperative and postoperative chest appearance

表1 术后并发症 [n (%)]

Table 1 Postoperative complications [n (%)]

并发症	数值
皮下气肿	0(0.0)
皮下血肿	1(5.9)
血清肿	0(0.0)
皮肤青紫	3(17.6)
乳头凹陷	0(0.0)
乳头偏移	0(0.0)
乳头乳晕复合体坏死	0(0.0)
乳头感觉障碍	0(0.0)
皮瓣坏死	0(0.0)
双侧乳房不对称	0(0.0)
腺体残余或复发	0(0.0)

2.3 随访情况

术后随访3~24个月，中位随访时间为6个月，无失访病例，随访期内通过BODY-Q胸部模块问卷评估了17例患者的满意度，所有患者均持满意态度，所有项目评分均在3以上（表2），无腺体残余和复发病例。典型病例手术前后对照见图2。

表2 术后满意度问卷评分情况 ($\bar{x} \pm s$)

Table 2 Postoperative satisfaction questionnaire scoring ($\bar{x} \pm s$)

项目	评分
乳房大小	3.59±0.50
乳房对称性	3.47±0.51
乳头感觉	3.82±0.39
伤口瘢痕	3.76±0.43
整体满意度	3.88±0.33



A: 术前；B: 术后10 d

A: View before operation; B: View 10 days after operation

3 讨论

男性乳腺发育占男性乳腺良性病变的32%~65%^[11],其发病机制尚不清楚,但普遍认为与雌激素水平增加,且雄激素向雌激素转化等因素相关^[12~14]。男性乳腺发育是男性乳腺癌的高危因素,文献报道CD13靶向干预可有效阻断其向乳腺癌的转变^[15~17]。本组患者术后石蜡病理证实均为乳腺良性病变。

3.1 手术操作要点

男性乳腺发育症对患者的心理影响较为严重,手术治疗不仅能有效预防癌变的发生,更能改善患者的身心健康^[18~19]。目前治疗男性乳腺发育的外科手术方法主要分为开放和腔镜下乳腺切除两种术式^[20],我院开展腔镜下男性乳腺切除17例,参照国内同道经验^[21~22],腺体游离方式主要分为溶脂和非溶脂两种方法,笔者的体会是在乳腺组织和胸大肌筋膜之间存在天然间隙,所以乳房后间隙采用非溶脂的方式用电钩直接游离,这样可以避免水雾影响手术视野及溶脂液注射过多破坏手术层面,而腺体浅层由大量脂肪组织构成,在浅层注射溶脂液不仅可以达到局部止血的作用,还可以溶解多余脂肪,更好地暴露手术视野和Cooper韧带,辅助吸脂后电钩游离,使得游离后皮瓣连续性好。皮瓣的薄厚及均匀程度是手术质量的重要指标,笔者的经验是术中可通过皮瓣透光程度判断皮瓣薄厚,当乳房皮肤透光颜色呈现为金黄色时,则为适宜的厚度;若呈现为红色时,则表明皮瓣过薄;若光透不过乳房皮肤时,则表明皮瓣过厚。此外,男性乳腺发育切除有别于恶性肿瘤根治术,治疗目的的主要为腺体切除,无需将皮瓣游离过薄,适当保留大颗粒脂肪,可有效降低术后皮瓣缺血或坏死的发生概率^[23]。

3.2 并发症发生原因及处理

相较于传统开放手术而言,腔镜下的乳腺切除可有效减少术后并发症发生^[24~25]。Wang等^[26]在30例行开放切除的患者随访中发现,其中11例存在不同程度的皮下血肿、皮肤青紫等症状。本组患者术后3例皮肤青紫于术后2周内自然消退,1例皮下血肿采用穿刺抽液后加压包扎恢复,此并发症发生于手术开展初期,考虑由于技术不熟练所致。笔者的体会是,腔镜下放大且清晰的手术视野,可以很大程度地避免手术操作对皮瓣血管的

损伤,同时应该在切除腺体后和关闭切口前反复探查创面出血情况,可有效减少此类并发症发生。

Choi等^[27]报道在71例开放切除术后并发2例乳头凹陷,本组病例采用腔镜下乳腺切除,未见此类并发症。笔者的体会是环乳晕切口男性乳腺切除术受操作空间及视野限制,容易造成外周腺体残留是导致乳头凹陷的主要原因。腔镜下操作空间开阔、视野清晰利于腺体的完整切除,待腺体切除后如触到乳房个别区域的隆起,可对隆起区域进行吸脂找平,但要注意尽量避免在中心区域吸脂,防止出现“火山口”现象^[28~29]。

马利燕等^[30]报道的18例腔镜病例中,其中4例出现乳头乳晕复合体坏死,2例出现乳头麻木。本组病例未见相关并发症,笔者认为在分离乳头乳晕下组织时,助手提拉乳头偏向对侧,在乳头乳晕复合体后留下约5~10 mm的腺体厚度,不仅可以防止术后乳头凹陷或偏移,同时可有效避免第4肋间神经的损伤,从而减少乳头感觉异常的发生。此外,术后覆盖中心带孔的敷料避免压迫乳头,保护乳头血供可有效降低乳头乳晕复合体坏死的发生风险。

3.3 美容效果及患者满意度

Fischer等^[31]报道37例行开放切除术的患者,其中4例由于瘢痕增生明显及轮廓畸形,严重影响生活质量。腔镜下乳腺腺体切除手术切口选择在腋窝处,该部位皮肤延展性良好且张力较低,位置隐蔽,恢复后切口瘢痕几乎难以察觉,可减轻患者对手术切口愈合情况和轮廓畸形的担忧。此外,结合本组资料及相关研究报道^[32],开放和腔镜腺体切除在复发率和腺体残余上并无显著差异,在随访问卷评分中,患者对乳房大小、对称性及切口瘢痕等方面均持满意态度。

3.4 研究的局限性

本文是一项单中心的回顾性研究,因本中心开展该术式时间较短、样本量较小、随访时间相对较短且未与传统手术进行对照研究,存在局限性,缺乏对照组限制了比较结果分析,可能导致研究结果的偏倚,短期随访限制了对长期手术结果和复发率的评估,其临床疗效有待进一步验证。

综上所述,初步研究显示腔镜下乳腺切除术治疗男性乳腺发育的主要目的在于矫正乳房外形,提升乳房美观度,恢复正常和对称的男性胸部轮廓,同时具有手术瘢痕小、切口隐蔽、并发症发

生率低等优势。因此，笔者认为该术式疗效可靠，值得广泛应用于临床。

作者贡献声明：王雪负责整理数据、统计分析和撰写文章；崔喆旭负责采集数据、病例随访；王模日根负责整理文献和协助修稿；王墨飞负责对文章的内容作批评性审阅与指导。

利益冲突：所有作者均声明不存在利益冲突。

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(本文编辑 姜晖)

本文引用格式:王雪,崔喆旭,王模日根,等.腔镜下男性乳腺切除术的临床效果及经验总结:附17例报告[J].中国普通外科杂志,2025, 34(11):2361–2367. doi:10.7659/j.issn.1005-6947.250337
Cite this article as: Wang X, Cui ZX, Wang MRG, et al. Clinical outcomes and experience of endoscopic mastectomy for gynecomastia: a report of 17 cases[J]. Chin J Gen Surg, 2025, 34(11): 2361–2367. doi:10.7659/j.issn.1005-6947.250337