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·指南与规范·

《2024 欧洲心脏病学会心房颤动管理指南》更新解读：心房颤动的外科诊治

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【摘要】 欧洲心脏病学会与欧洲胸心外科协会近期更新并发布了《2024 欧洲心脏病学会心房颤动管理指南》。立足最新循证医学证据，该指南在心房颤动（房颤）诊断标准、AF-CARE 治疗原则（AF：房颤，C：合并症和风险因素管理，A：避免卒中和血栓栓塞，R：通过心率和节律控制减轻症状，E：评估和动态重新评估）、合并症和危险因素管理等诸多方面均有更新，尤其是关于房颤外科治疗的相关建议存在较大变化。因此，本文以房颤的外科治疗为线索，旨在解读该指南在 AF-CARE 治疗原则、房颤诊断标准及房颤外科治疗等方面的更新。

【关键词】 心房颤动；外科治疗；诊断；指南解读

Updated interpretation of the 2024 ESC guidelines for the management of atrial fibrillation: Surgical management of atrial fibrillation

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【Abstract】 The European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS) have recently updated and published the 2024 ESC guidelines for the management of atrial fibrillation. Based on the latest evidences, the guidelines have been updated in many aspects, such as diagnostic criteria for atrial fibrillation, AF-CARE treatment principles, comorbidities and risk factor management. In particular, there are significant changes in the recommendations for surgical management of atrial fibrillation in the guidelines. Therefore, this paper aims to interpret the content updates of the guidelines in AF-CARE treatment principles, diagnostic criteria and surgical treatment of atrial fibrillation, especially highlighting the updates and new suggestions about surgical treatment of atrial fibrillation.

【Key words】 Atrial fibrillation; surgical treatment; diagnosis; guidance interpretation

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心房颤动（房颤）是临床实践中最常见的心律失常。流行病学数据显示，全球房颤患者超 3 300 万人，我国房颤患者近 1 200 万人，且随着年龄增长，房颤患病率逐年提高[1-2]。房颤主要见于老年人（>70 岁）、与生活方式相关疾病的人群（如高血压、2 型糖尿病、阻塞性睡眠呼吸暂停和肥胖）[3-8]。此外房颤也可能在特定情况下触发，如酗酒和压力[3, 9-10]。房颤会显著增加心力衰竭、卒中或心肌梗死等不良并发症的发生率，给患者及社会带来沉重的健康及经济负担[11-12]。因此，对房颤的预防、诊断和治疗显得尤为重要。

2024 年 8 月 30 日，欧洲心脏病学会（European Society of Cardiology，ESC）发布了最新的《2024 ESC 心房颤动管理指南》[13]（下文简称“2024 ESC 房颤指南”），与上一版本（2020 版）相比，该指南立足最新循证医学证据，在诸多方面做出了修改与更新。其中最引人注目的是 AF-CARE 原则（AF：房颤，C：合并症和风险因素管理，A：避免卒中和血栓栓塞，R：通过心率和节律控制减轻症状，E：评估和动态重新评估）的提出。此外，该指南还更新了房颤的诊断评估标准，并在房颤的治疗管理方面提出了较多新建议，尤其是涉及房颤外科治疗手段的部分，推荐等级和证据水平与上一版指南相比均有显著提升。因此我们将着眼于房颤的外科治疗，从 AF-CARE 原则、房颤诊断评估与房颤外科治疗 3 个方面解读 2024 ESC 房颤指南的更新，以便在临床实践中促进对指南相关内容的理解，强调房颤外科治疗的安全性及有效性，为临床医生提供更精准的诊治手段。

1　AF-CARE 原则的内涵及房颤外科治疗在 AF-CARE 原则中的地位

在 2024 ESC 房颤指南中，以先前的 ESC 指南为基础，如 2016 年 ESC 房颤指南中以结果为重点的五部综合方法[14]，以及 2020 年 ESC 房颤指南中房颤更好护理（ABC）途径[15]，整合并发展了过去的方法，开发出了 AF-CARE 框架。AF-CARE 的提出是基于新方法和技术（尤其是节律控制）的并行发展。新证据表明，若将房颤的合并症和风险因素管理均纳入考虑，AF 管理的所有方面都有其相应的价值，包括改善症状、改善预后、预防血栓栓塞以及对心率和节律控制策略反应的相关管理。AF-CARE 原则明确指出需要对每例患者进行个性化评估和随访，并考虑患者的房颤症状和相关合并症随时间变化积极采取相应的干预措施。AF-CARE 原则已被应用于不同的患者路径中，极大地方便了其在日常临床护理中的实践应用[13]。

在 AF-CARE 治疗原则的具体措施中，外科治疗因其安全性与可靠性，占据了重要地位。在 2024 ESC 房颤指南中，外科治疗相关的推荐等级和证据水平与上一版本相比有了显著提高。如避免卒中和血栓栓塞原则（原则 A）的提出，是由于房颤是血栓性卒中的重要危险因素，房颤患者卒中风险是普通人的 5 倍，且伴随年龄或左心室功能不全等风险因素增加而增加[16-20]。由于左心耳血栓形成是房颤患者卒中的主要原因，左心耳的外科处理成为外科预防房颤患者卒中的关键，且其安全性与有效性已在近期研究[21-22]中得到进一步证实。类似地，通过心率和节律控制减轻症状原则（原则 R）的内涵即患者首次诊断为房颤时，应首先判断患者所患房颤类型（阵发性房颤、持续性房颤和永久性房颤），然后通过临床实践，判断患者是否需要通过外科消融来控制节律，最终达到减轻症状的目的[13]。近年来，房颤外科消融被证明具有高窦性心律转复率与低房颤复发率，同样在 AF-CARE 治疗原则中发挥了重要作用[23]。

2　房颤诊断评估的更新

2024 ESC 房颤指南指出，所有房颤患者都应该提供全面的诊断评估和医学病史检查，以确定其发病的危险因素。房颤诊断通常很简单，如标准的 12 导联心电图上的特征与典型症状相关。但在无症状发作或者在长期检测设备上没有检测到房颤的情况下，诊断变得具有挑战性[13]。为了防止对房颤的错误诊断，ESC 工作组建议仍然需要心电图来启动风险分层和房颤管理。在当下的临床实践中，使用心电图确诊房颤可以有很多种选择：除了在标准 12 导联心电图中发现持续存在房颤外，还可以使用能提供心电图的单导联和多导联设备（但不包括非心电图可穿戴设备和其他通常使用光电容积描述法的设备）。总之，在所有房颤患者中，均应使用 12 导联心电图来证实心律、确定心律，并寻找结构性心脏疾病的迹象，是否有心脏传导缺陷或者缺血[24]。此外还需进行血液检查（肾功能、血清电解质、肝功能、全血细胞计数、葡萄糖糖化血红蛋白和甲状腺测试）来检测任何可加剧房颤或增加房颤风险的出血或血栓栓塞[25-26]。因此 2024 ESC 房颤指南指出，除心电图外，其他检查应该取决于患者个性化评估的治疗策略（推荐等级Ⅰ，证据水平 A）[27-33]。而 2020 ESC 房颤指南中只提到需要心电

图来进行房颤诊治，标准 12 导联心电图或单导联心电图是临床诊断的依据（推荐等级Ⅱa，证据水平 B）。该建议的更新在一定程度上体现了对房颤诊断的认识正在被不断完善，已不再局限于疾病本身的确诊。此外，2024 ESC 房颤指南提出，经胸超声心动图（transthoracic echocardiography，TTE）应在患者初次就诊时进行或者在心血管体征或症状发生变化的患者中进行，并且其结果将指导管理决策。这表明工作组认识到 TTE 的可施行性，但在初级保健环境中，TTE 可能受到限制或者延迟，因此指南同时指出，TTE 的开展受限不应使口服抗凝药或者其他 AF-CARE 组成部分的启动延迟[34]。同时，2024 ESC 房颤指南建议应在治疗发生重大变化前后重新评估房颤相关症状的影响，从而为共同决策提供信息并指导治疗选择（推荐等级Ⅱ，证据水平 B）。

3 房颤外科治疗的更新

3.1 外科处理左心耳

房颤患者的血栓主要来源于左心耳，在房颤外科治疗中处理左心耳能够有效预防卒中。2020 ESC 房颤指南指出，左心耳闭合或者切除可预防房颤患者卒中（推荐等级Ⅱb，证据水平 C）。而 2024 ESC 房颤指南提出，左心耳封堵术或切除术都有助于即将接受心脏手术的房颤患者预防卒中[35-36]。Whitlock 研究团队[22] 的左心耳封堵术研究（LAAOS Ⅲ），将 4 811 例房颤患者随机分组，探索在心脏手术中接受左心耳封堵术是否能预防卒中。结果表明，在平均 3.8 年的随访中，左心耳封堵组有 114 例（4.8%）患者患有缺血性卒中或者脑卒中，对照组有 168 例（7.0%）。由于该试验没有将左心耳封堵术与抗凝进行比较，因此，2024 ESC 房颤指南指出，对于房颤患者，除抗凝治疗外，应考虑外科处理左心耳做为预防血栓栓塞的辅助治疗方法（推荐等级Ⅰ，证据水平 B）。相较于 2020 ESC 房颤指南，2024 ESC 房颤指南关于左心耳外科处理技术的推荐等级和证据水平都相应提高（推荐等级从Ⅱb 升至Ⅰ，证据水平从 C 升至 B），并在预防缺血性卒中和血栓作为房颤患者的优势选择，表明随着对相关研究不断深化，其认可度正在不断提升。指南同时指出，对于有抗凝禁忌证的患者来说，孤立的心外膜左心耳夹闭术比经皮左心耳封堵术具有潜在优势，因为心外膜夹闭术术后无需抗凝治疗[13]。许多研究[37] 均表明，使用心外膜左心耳夹进行独立左心耳夹闭术安全且有效。在近期的一项随机对照试验（randomized controlled trial，RCT）[22] 中，接受心脏手术合并房颤且 CHA_2DS_2-VASc 评分≥2 的患者被随机分为心脏手术同期闭合左心耳组（2 379 例）和心脏手术同期未处理左心耳组（2 391例），随访发现，左心耳闭合组卒中或体循环栓塞风险明显低于左心耳未闭合组（4.8% *vs.* 7.0%，*P*=0.001），证明左心耳夹闭术的有效性。近期研究[38-40]也证明，左心耳夹闭的患者血栓栓塞、全因死亡以及复合事件发生率均较低，且左心耳夹在降低卒中风险的同时还能使左心耳和左心房发生电学隔离，但不会直接影响血流动力学和心内压，从而能够减少房颤复发。虽然心外膜左心耳夹闭术大部分数据和经验都来自单个夹闭装置，但长期随访显示，房颤患者在心脏直视手术同期行左心耳夹闭不会增加术后院内不良事件风险，且未发现器械相关的并发症，因此使用心外膜左心耳夹进行左心耳闭合是安全的[41-43]。2024 ESC 房颤指南指出，在决定左心耳处理策略时，多学科团队的协作对于患者选择心外膜左心耳夹闭或经皮左心耳封堵术至关重要[44]。

除上述内容更新外，2024 ESC 房颤指南还为左心耳外科处理同期胸腔镜或杂交房颤消融及孤立性房颤胸腔镜关闭左心耳提供了建议。指南认为，对于接受胸腔镜或杂交房颤消融的房颤患者，应考虑将手术左心耳夹闭作为口服抗凝的辅助手段，以预防缺血性卒中和血栓栓塞（推荐等级Ⅱa，证据水平 C），而对于孤立性胸腔镜手术闭合左心耳，指南认为，对于有长期抗凝治疗禁忌证的房颤患者，可以考虑进行手术以防止缺血性卒中和血栓栓塞（推荐等级 Ⅱb，证据水平 C）。这两条新增建议虽然推荐等级及证据水平都不算高，但仍就手术闭合左心耳合并胸腔镜消融或孤立进行左心耳闭合进行了一定的指导，有利于推动外科处理左心耳方法在临床实践中的规范应用。

3.2 胸腔镜微创房颤或内外科杂交房颤消融

微创外科房颤消融可以通过胸腔镜或剑突下进行，胸腔镜这个术语涵盖这两种策略。杂交房颤消融方法是指在跳动的心脏上进行胸腔镜心外膜消融与内科心内膜消融相结合，可同时进行或者顺序进行[45]。将胸腔镜心外膜消融与心内膜导管消融相结合的理由是：采用心外膜进行心脏直视手术可以实施更有效的透壁消融策略[46-47]。对于阵发性房颤，胸腔镜或杂交导管消融方法可能在经皮导管消融策略失败后考虑[23, 48-49]。FAST 研究[48] 长期随访（平均 7.0 年）阵发性和持续性房颤患者，发现心律

失常复发很常见，但胸腔镜消融复发率明显低于导管消融。对于阵发性房颤，胸腔镜或杂交消融方法适合作为维持长期窦性心律的首选手术[23, 47-51]；但对持续性房颤患者，一项为期 12 个月的 RCT 发现，胸腔镜消融和导管消融在心律失常自由度方面无差异[52]。虽然两种技术的总体发病率和死亡率都很低，胸腔镜或杂交消融的并发症发生率高于导管消融，但长期死亡率、心肌梗死或卒中的长期综合征发生率相似[47-48]。与此同时，指南提到，近期试验评估了杂交心外膜加心内膜消融疗法对在 AAD 疗法无效的持续性房颤中的有效性和安全性，包括一项单中心 RCT[49] 和两项多中心 RCT[50, 53]。在这些试验中，杂交消融在维持长期窦性心律方面始终优于单纯导管消融，且主要不良事件没有显著差异（推荐等级Ⅱa，证据水平 A）。而在 2020 ESC 房颤指南中胸腔镜手术（包括杂交手术消融）的相关推荐为：对于有复发危险因素，在经历过至少一次 AAD 治疗后仍有症状，且希望进一步进行心律控制治疗的持续性房颤患者，可以考虑胸腔镜手术，包括杂交手术消融（推荐等级Ⅱb，证据水平 C）。相较于 2020 ESC 房颤指南，2024 ESC 房颤指南中杂交消融推荐等级从Ⅱb 升至Ⅱa，证据水平从 C 升至 A，这无一不表明，相较于节律控制治疗，腔镜微创房颤消融的安全性与有效性正在被广泛认可。

此外，2024 ESC 房颤指南还新增了关于持续性房颤选择胸腔镜或杂交消融及术后使用抗凝药物的建议。指南认为，在电生理学家和外科医生共同决策的节律控制团队中，对 AAD 治疗无效的症状持续性房颤患者应考虑胸腔镜微创或杂交消融手术，以预防房颤的症状、复发和进展（推荐等级Ⅱa，证据水平 A）；而对于胸腔镜消融或杂交消融后血栓栓塞风险高的房颤患者，应继续口服抗凝剂，以预防缺血性卒中和血栓栓塞，而不依赖于心律结局或 LAA 排除（推荐等级Ⅰ，证据水平 C）。这些新增建议补充了胸腔镜及混合消融的适用范围，明确了术后应当使用抗凝剂的场景，为微创房颤消融的临床应用提供了更加全面的指导。

3.3　心脏手术期间的房颤消融

对于接受心脏手术的患者，房颤是导致早期死亡、晚期死亡和卒中的重要危险因素[54-56]。2024 ESC 房颤指南指出，最有效的外科消融方法是迷宫手术，包括 PVI 等全层病变，随后使用双极射频或低温消融术进行改良，并进行左心耳闭合。多学科团队的密切合作和共同决策可以提高手术消融的质量和结果[57]。多项 RCT[58-63] 显示，在心脏手术中手术消融增加心律失常触发的可能性。手术消融不会增加二尖瓣手术患者的发病率或死亡率[58-60, 64]。由于房颤外科消融安全性与有效性的证据日益充分，2024 ESC 房颤指南推荐在经验丰富的电生理学家和外科医生的共同支持下，对接受二尖瓣手术且房颤适合进行节律控制的房颤患者同时进行手术消融，以控制房颤症状，防止房颤复发（推荐等级Ⅰ，证据水平 A）。2020 ESC 房颤指南的建议为：对接受心脏手术的房颤患者应综合考虑房颤消除的益处和复发的危险因素（左心房扩张、房颤年限、年龄、肾功能障碍和其他心血管风险因素）间的平衡后考虑同期进行房颤的外科消融（推荐等级Ⅱa，证据水平 A）。相较于 2020 ESC 房颤指南，2024 ESC 房颤指南对房颤外科消融的认可度显著提高，且明确指出了适合接受房颤外科消融的人群[58-59]。近期也有较多研究[65-68] 报道，房颤对二尖瓣置换术的不良影响，以及房颤的节律控制能减轻瓣膜反流程度，其均强调房颤节律控制的重要性。其他包括大型登记研究在内的观察性数据支持了外科房颤消融的潜在价值[45, 69-79]，但需要进一步的 RCT 来评估患者选择，以及这种方法是否有助于预防卒中、血栓栓塞和死亡。

此外，2024 ESC 房颤指南建议对于接受非二尖瓣心脏手术和房颤的患者也可以在经验丰富的电生理学家和心律失常外科医生的共同支持下考虑合并手术消融，以采取心律控制策略来预防房颤症状和复发（推荐等级Ⅰ，证据水平 C），这是新指南相对于 2020 版指南新增的建议之一。关于房颤的外科消融，2024 ESC 房颤指南新增一条建议：对手术消融患者术中应进行检查左房血栓，建议独立于口服抗凝药物，指导手术策略，以预防术中缺血性卒中和血栓栓塞[80-85]（推荐等级Ⅱa，证据水平 B）。这两条新增建议补充了对除二尖瓣手术外其他情况下考虑外科消融的相关内容，并指出了手术消融时应额外进行的检查。新指南的更新不仅使外科消融的指导逻辑更加完善，而且反映了外科消融各个方面的研究正在不断深入，其认可度也在逐渐提升。

4　小结

本文从 2024 ESC 房颤指南中 AF-CARE 原则的提出、2024 年房颤诊断评估标准的更新和外科治疗在房颤治疗中的地位这 3 个方面展开论述。房颤外科治疗在房颤中的地位及外科处理左心耳证据

逐渐充分。与此同时，还指出房颤外科手术消融存在的潜在价值和对其认可度提高，但需要进一步的研究来证实。

利益冲突：无。

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