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Prevention of complications in surgical treatment of thyroid malignancies

Papillary thyroid carcinoma accounts for the overwhelming majority of thyroid malignancies. Its incidence has been dramatically increasing and is attributed to the incidental detection of small papillary microcarcinoma. Surgical management of thyroid carcinoma has been deescalating to avoid overtreating patients by adopting active observation or ablative treatment for microcarcinoma and to potentially avoid complications by recommending hemithyroidectomy and avoiding routine prophylactic central nodal dissections for low-risk carcinoma. In addition, a sound and systematic thyroidectomy surgical technique is most relevant to avoid surgical complications including wound haematoma, recurrent laryngeal nerve (RLN) palsy and permanent hypoparathyroidism. Apart from standard suture ligation and clipping of vessels, new energy sources have been applied to facilitate dissection and haemostasis and to achieve a suture-less thyroidectomy with a low postoperative hematoma rate. Intraoperative neuromonitoring (IONM) has been increasingly applied to aid in the early identification of RLN, its preservation and subsequent confirmation of its functional integrity although there is no strong evidence to show that the use of IONM will decrease the incidence of RLN palsy. Near-infrared (NIR) autofluorescence technology with dye or probe has been actively investigated to give a more objective identification and confirmation of viability of parathyroid glands, to preserve parathyroid function and to avoid permanent hypocalcaemia. Devascularized parathyroid gland can be more objectively identified for immediate reimplantation to avoid permanent hypoparathyroidism. With application of all these management tactics and surgical strategies, surgical treatment for thyroid malignancies would become much safer and complications can be avoided.

卢宠猷

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甲状腺恶性肿瘤手术并发症的预防

甲状腺乳头状癌占甲状腺恶性肿瘤的绝大部分。它的发病率一直在急剧上升，这要归功于偶然发现的小乳头状微小癌。甲状腺癌的手术治疗一直在降级，对微小癌采取积极观察或消融治疗，以避免对患者的过度治疗；并通过推荐半侧甲状腺切除术和避免对低风险癌进行常规预防性中央淋巴结清扫来避免潜在的并发症。此外，健全和系统的甲状腺切除手术技术对于避免手术并发症，包括伤口血肿、喉返神经（RLN）麻痹和永久性甲状旁腺功能减退最为相关。除了标准的缝合结扎和血管夹闭外，新的能量设备已被应用于促进精细解剖和止血，实现无缝合甲状腺切除术，并降低术后血肿率。术中神经监测（IONM）已被越来越多地应用，以帮助早期识别RLN，保存它并随后确认其功能的完整性，尽管没有强有力的证据表明使用IONM会减少RLN麻痹的发生率。带染料或探针的近红外（NIR）自发荧光技术已被积极研究，以更客观地识别和确认甲状旁腺的活力，保护甲状旁腺功能，避免永久性低钙血症。去血管化的甲状旁腺可以被更客观地识别，以便立即重新植入，避免出现永久性的甲状旁腺功能减退。随着所有这些管理策略和手术策略的应用，甲状腺恶性肿瘤的手术治疗将变得更加安全，并发症也可以避免。