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ORIGINAL ARTICLE

Utility and Versatility of the Supraclavicular Artery Island Flap in Head and Neck Reconstruction☆

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KEYWORDS
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Abstract
Introduction: The supraclavicular island flap is a rotational pedicled flap and may have some advantages in head and neck reconstruction compared with free-tissue transfer when this kind of reconstruction is not affordable or recommended.
Material and methods: We present our experience during the year 2016 in the application of the supraclavicular island flap in five cases as an alternative to microvascular reconstruction in several defects after resection of head and neck tumours. In two patients, the flap was used to close the surgical pharyngostoma after total laryngectomy with partial pharyngectomy. In one patient, it was used in lateral facial reconstruction after partial resection of the temporal bone. In one case, it was used to close a skin defect after total laryngectomy with prelaryngeal tissue extension. And in the last case to close a neck skin defect after primary closure of a pharyngo-cutaneous fistula. There were no flap complications, and the result was satisfactory in all cases.
Results: The supraclavicular artery island flap is useful and versatile in head and neck reconstruction. Operating room time in aged patients or those with comorbidities will be reduced compared to free flaps. The surgical technique is relatively easy and can be used for skin and mucosal coverage.
Conclusion: The supraclavicular island flap could be a recommended option in head and neck reconstruction, its use seems to be increasing and provides a safe and time-saving option to free flaps in selected patients.
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PALABRAS CLAVE
Colgajo quirúrgico;
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Neoplasias de cabeza y cuello;
Neoplasias parotídeas;
Colgajo en isla;
Colgajo pediculado

Utilidad y versatilidad del colgajo en isla de la arteria supraclavicular en reconstrucción de cabeza y cuello

Resumen
Introducción: El colgajo supraclavicular en isla es un colgajo rotacional pediculado que puede presentar ciertas ventajas en reconstrucción de cabeza y cuello en pacientes donde una reconstrucción microvascularizada no sea factible o aconsejable.
Material y métodos: Presentamos nuestra experiencia durante el año 2016 en 5 casos con la aplicación de este colgajo, como alternativa a una reconstrucción microvascularizada tras resección de distintos tumores de cabeza y cuello. En 2 casos se utilizó para reconstrucción del faringostoma quirúrgico tras laringectomía total con faringectomía parcial. En un caso para reconstrucción facial lateral tras resección parcial de temporal. En un caso para reconstrucción de un defecto cutáneo tras laringectomía total ampliada y en otro para cobertura cutánea tras el cierre primario de una fístula faringocutánea. No hubo complicaciones del colgajo y el resultado final fue satisfactorio en todos los casos.
Resultados: El colgajo supraclavicular en isla presenta una utilidad y es muy versátil en reconstrucciones de cabeza y cuello. El tiempo quirúrgico en pacientes de riesgo se reducirá respecto a colgajos libres microvascularizados. Su técnica quirúrgica es relativamente sencilla y se adapta perfectamente a reconstrucciones mucosas o cutáneas.
Conclusión: El colgajo supraclavicular en isla es una opción recomendable en reconstrucción de cabeza y cuello, su uso parece estar incrementándose y supone una alternativa segura y sobre todo rápida a los colgajos libres microvascularizados en pacientes seleccionados.
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Introduction

Head and neck reconstructions in oncology surgery often require the use of local, regional or free flaps to cover mucosal or cutaneous surfaces and for restoration of anatomical structure, for a certain function or aesthetics. Although reconstruction through vascularised free tissue flaps has led to a leap in quality in oncology surgery, its use requires the patient to be in good physical condition, considerable reconstructive experience, long periods in the operating theatre and maximum postoperative monitoring. As a result, pedicled flaps continue to play an important role in reconstructive head and neck surgery, particularly in patients with advanced comorbidities or who are of advanced ages.

The supraclavicular island skin flap was described by Lamberty[1] in 1979 and derives from the studies on ''shoulder'' flaps by Mütter[2] in 1842 and their redefinition by Kirschbaum[3] in 1958, which he called the acromial ''epaulet'' flap as a reference to the ornamental fabric on the shoulders of military uniforms. Both the Mütter and Kirschbaum flaps have random vascularisation but Lamberty describes the supraclavicular island artery flap as an axial flap based on the supraclavicular artery and describes the origin of this artery in the transverse cervical artery. Moreover, he describes the origin of the transverse cervical artery preferably in the thyrocervical arterial trunk (60% of the thyrocervical trunk, 30% of the distal subclavian artery, 6.6% of the proximal subclavian artery and 3.3% of the subclavian artery in midregion).[1] Vein drainage occurs thanks to the 2 venasa comitans which are anastomosed to the external jugular vein or the transverse cervical vein.

In 1997 Pallua et al.[4] published a modification of the flap and defined it as the ''supraclavicular island flap'', with Pallua et al.[5] publishing the technique for its tunnelisation in head and neck reconstructions again in 2000 and creating considerable drive for its use worldwide.

One of its advantages is that the supraclavicular island flap is highly foldable, small in volume and its length allows sutures to be made without tension in the facial, cervical, auricular, oropharyhgeal and parotid regions and also in the reconstruction of pharyngostomas after total laryngectomy. The almost constant possibility of a primary closure in the donor site after good elevation of the remaining epithelial edges, low morbidity in the shoulder region and rapidity of its elevation makes this flap viable if a microsurgical flap is not going to be used due to patient, hospital or tumour circumstances.[6] A summary of the supraclavicular island flap advantages are displayed in Table 1.

Its limitations are the need for a wide rotation arc, the need for a flap with a muscular component for the fill-in or coverage of cavities, distal vascularisation which is compromised in patients who are smokers or the need to cover defects which go as far as or overpass the oropharynx.[7] Since this is a flap from the cervical region, proximity of the anatomical area to reconstruct impedes working in 2 teams, which means in the majority of cases the raising of the flap and the removal of the tumour cannot be performed simultaneously.

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