

# McCraw and Arnold's Atlas of Muscle and Musculocutaneous Flaps



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Global-HELP  
Publication

# PLATYSMA

## ANATOMICAL CONSIDERATIONS

### *Surface Markings*

The platysma muscle extends from a point near the anterior midline of the neck to the border of the trapezius muscle posteriorly. This very wide and thin muscle overlaps both the clavicle and the mandible. The muscular expanse is best demonstrated by an exaggerated “grizzly bear” grimace.

### *Origin and Insertion*

The muscular origin extends in a broad front from the manubrium to the acromion. The insertion covers the lower margin of the mandible and is connected to the risorius and angular depressor muscles of the lower lip. Through these connections the platysma muscle contributes to lower lip depression in the process of its surface contraction of the neck skin. Its functional loss in the neck is not replaced by other muscles, but this loss is seldom noticed.

### *Adjacent Muscles*

The platysma muscle is densely adherent to the anterior neck skin and overlies all of the deep structures of the neck. Above the mandible it coalesces with the superficial muscular aponeurotic system (S.M.A.S.) of the cheek.

### *Vascular Pattern*

The vascular pattern is variable and diffuse, but the predominant vessels supplying the muscle enter its undersurface at the lower mandibular border in the area of the facial artery. The secondary blood supply enters the muscle from the superior thyroid vessels. Both sets of vessels contribute numerous small, deep perforating vessels to the muscle. The vascular connections between the platysma muscle and the overlying neck skin are best described as “delicate.”

### *Motor Nerve*

Facial nerve.

### *Sensory Nerve*

Cervical plexus.

## USES

The platysma myocutaneous flap is one which is commonly overlooked. Nonetheless, it is very useful for limited intraoral or surface coverage problems in an arc extending eight to ten centimeters from the level of the

facial artery at the mandible. This arc includes the lower cheek, the lower lip, the floor of the mouth, and the mastoid area.

## REGIONAL FLAP COMPARISONS

The platysma myocutaneous flap is best compared to the temporalis muscle flap because of the similar ease of elevation and the lack of functional loss. This should make it a reasonable consideration for limited coverage problems in the general area around the facial artery. The donor site is much less deforming than that of the sternocleidomastoid myocutaneous flap, and it is obviously less complicated to elevate than the other major chest, back, or neck flaps. Its thinness is unmatched by any other myocutaneous flap.

## DISADVANTAGES

The primary disadvantage of this interesting flap is that the dominant vasculature is seldom visualized; therefore, any unusual vascular location could compromise the viability of the most distal portion of the flap. Unless one carefully unfolds the flap as it passes over the mandible, a bulge will be evident. After the flap is in place for several weeks, this bulge can be resected without harming the viability of the flap. Like any muscle flap, constriction of the muscle beneath a tight subcutaneous tunnel is verboten. It does not have the disadvantage of the temporalis muscle in twitching since it is denervated by its elevation. This flap should not be used at the time of a neck dissection since the removal of the platysma muscle will harm the blood supply to the remaining neck flaps.

## ADVANTAGES

The platysma myocutaneous flap is simple to use and causes very little harm to the neck contour. The color match of the skin is relatively favorable for lower cheek and lateral chin coverage, and its appearance is vastly superior to a full-thickness skin graft in these areas. In men the cutaneous segment can be designed to carry either hair-bearing or non-hair-bearing skin, depending on the elected location of the skin “island” in the neck. The skin “island” can be made quite small because the flap skin receives its blood supply directly from multiple, minute muscular perforating vessels. This also allows one to close the donor defect primarily.

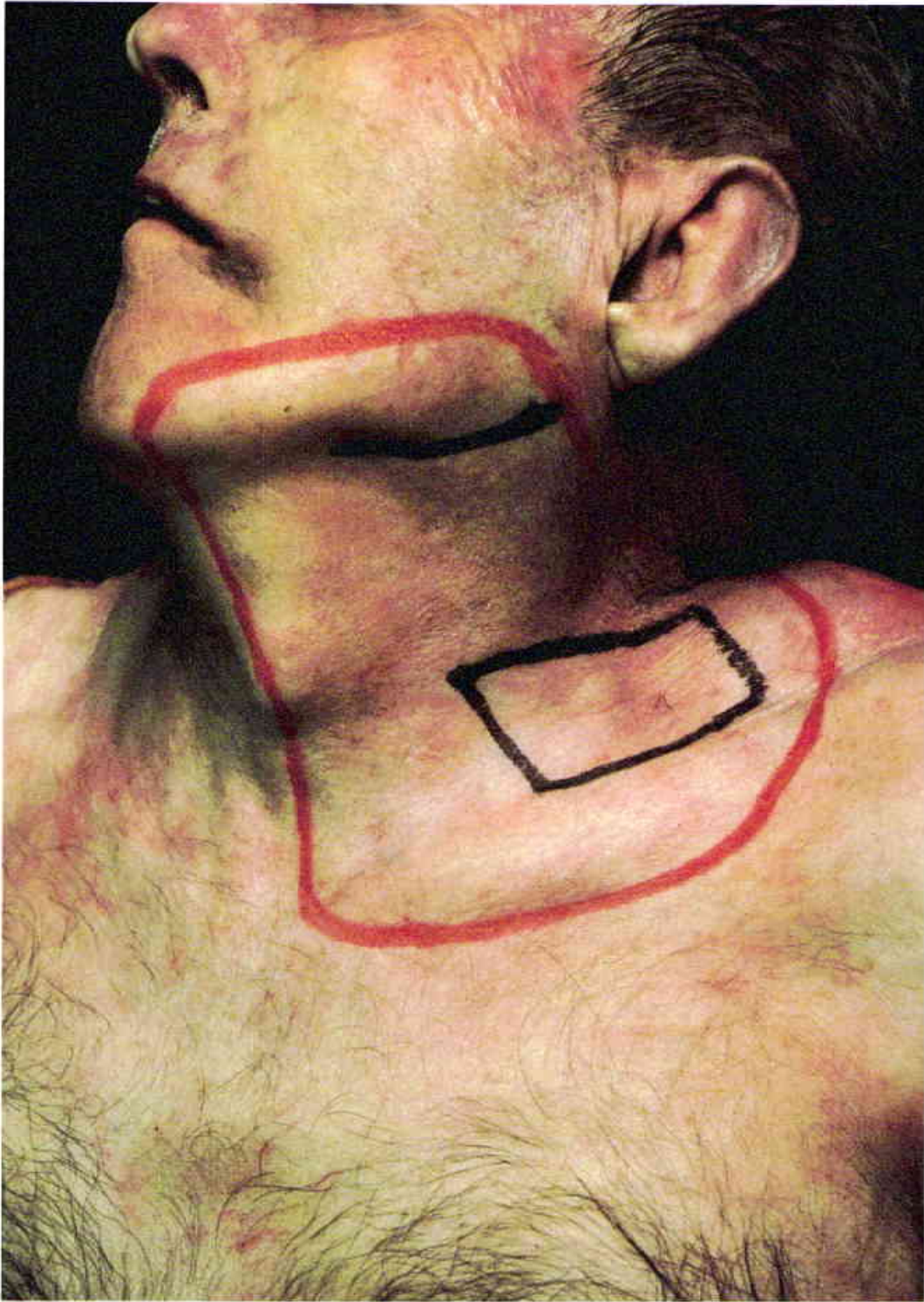
## **COMPLICATIONS, PITFALLS, AND DONOR SITE**

The number of platysma cases done to date is so small that the full spectrum of complications is indeterminate. We have not experienced a flap failure, but the flap has not been used in an irradiated field. To this point all dissections have been stopped below the level of the facial artery. The flap has not been used as a pure "island" flap on skeletonized facial vessels; rather it has only been used as a cutaneous "paddle" on a broad surface of platysma muscle. The primary pitfall is to rotate the muscle timidly, thereby leaving a muscular

bulge at the point where the muscle crosses the mandible. It is possible to injure the marginal mandibular nerve if the dissection is carried above the facial vessels, but this is easily avoided.

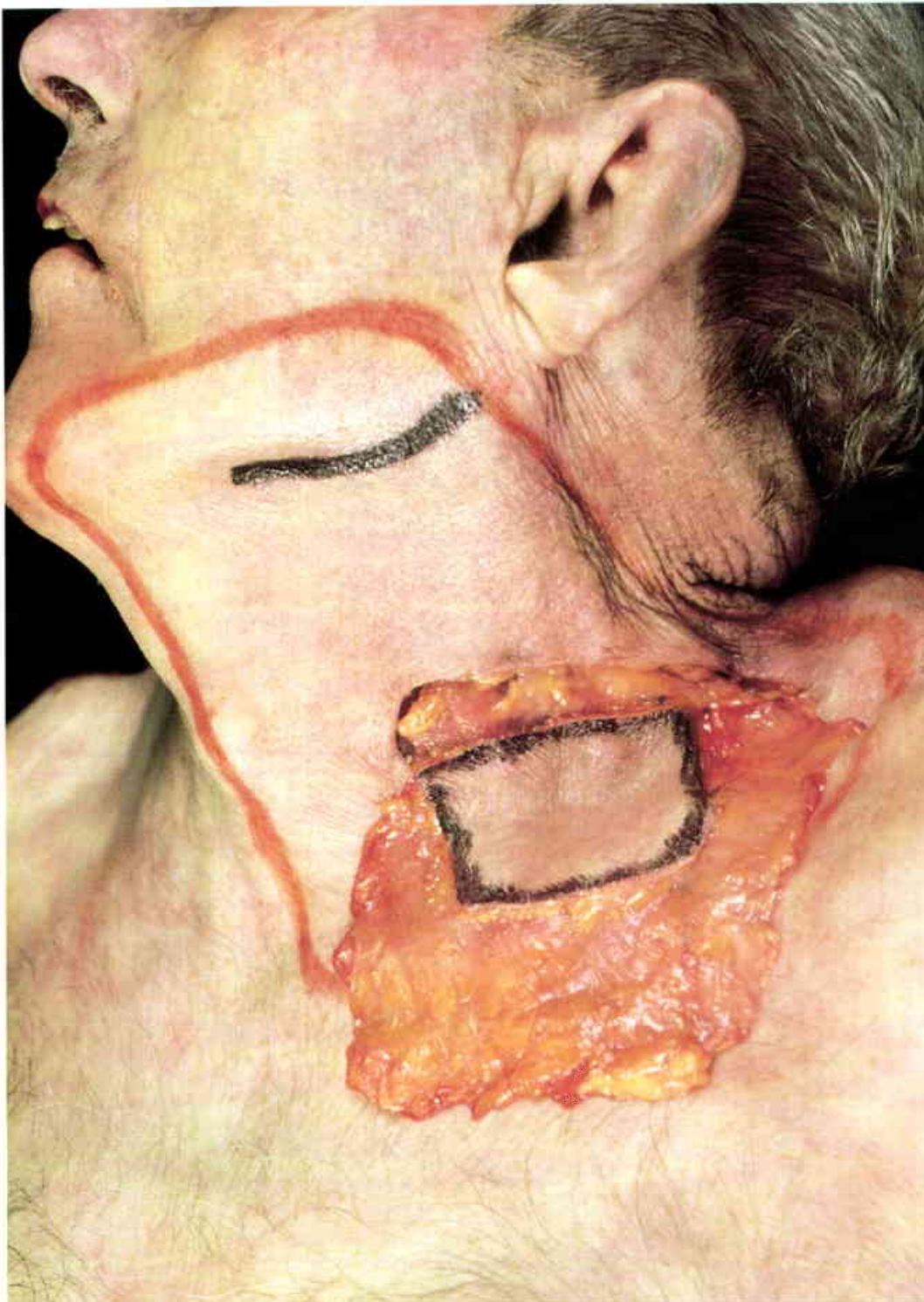
The primarily closed donor site leaves little deformity even when a vertical closure is required. A skin graft may be needed for a large platysma myocutaneous flap because extreme neck movements require considerable elasticity in the remaining neck skin. Every attempt should be made to keep the donor site within the "neck collar" area since this acts as a "camouflage" and also increases the arc of flap rotation.





1

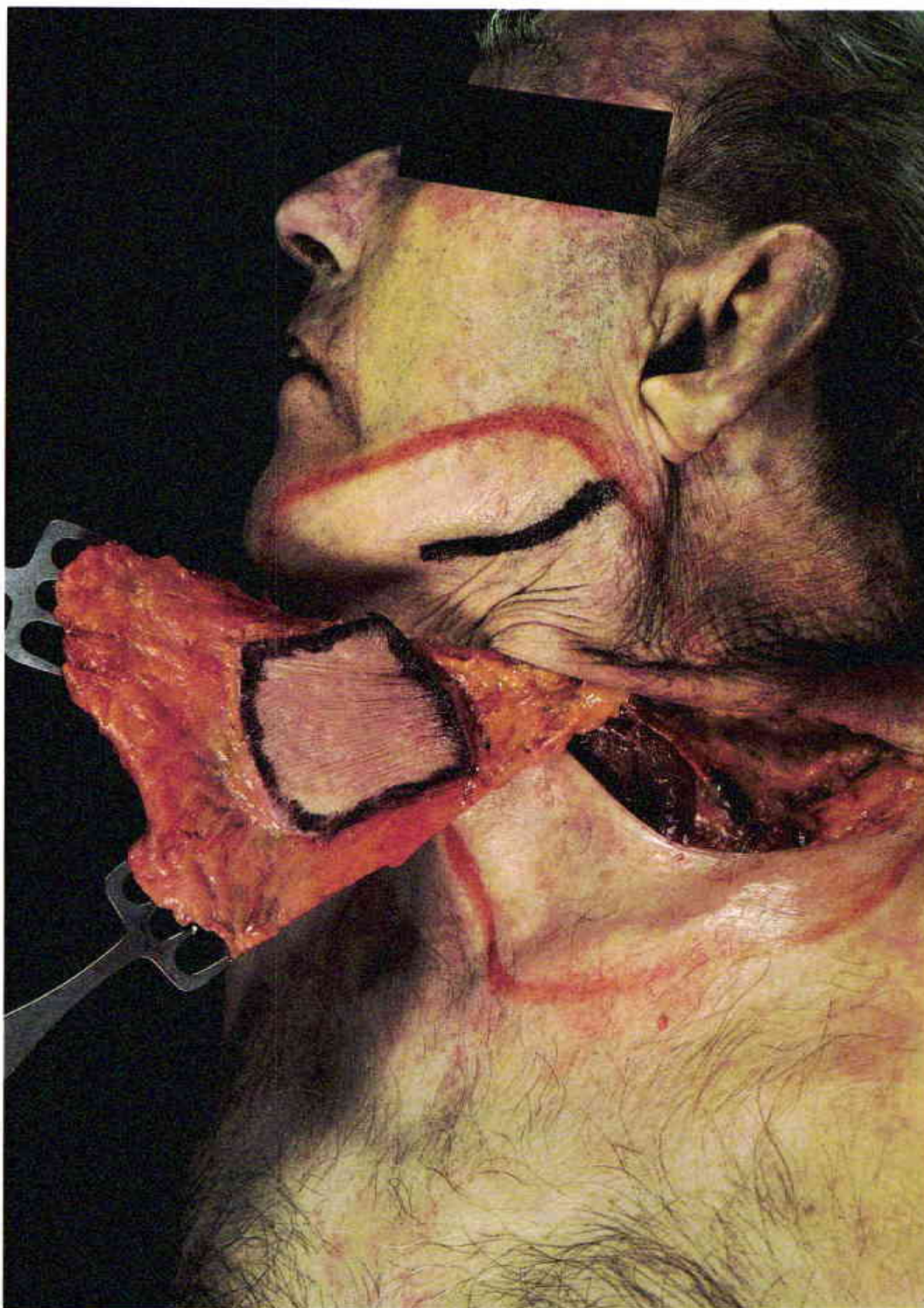
The platysma muscle is outlined in red with its extensions onto the cheek and the area below the clavicle. The location of the skin island (outlined in black) is chosen because it overlies the most prominent platysmal "band." This lateral location also improves the arc of rotation of the flap. The upper black line, adjacent to the mandible, is a proposed counterincision which can be used to facilitate the dissection of the facial vessels.



2

The infraclavicular portion of the muscle is elevated to demonstrate its extensive origin. The skin "island" is placed just lateral to the sternocleidomastoid muscle in a hairless area.





3

If the muscle is elevated only to the level of the facial artery the primary blood supply from the facial artery should not be harmed. This will provide a muscle flap which will cover the larynx, the lower cheek, and the mastoid process.



4

Anteriorly, the skin “paddle” reaches the chin as well as the floor of the mouth. The portion of the muscle seen covering the chin is not always viable because the blood supply to the distal muscle from the facial artery is variable.





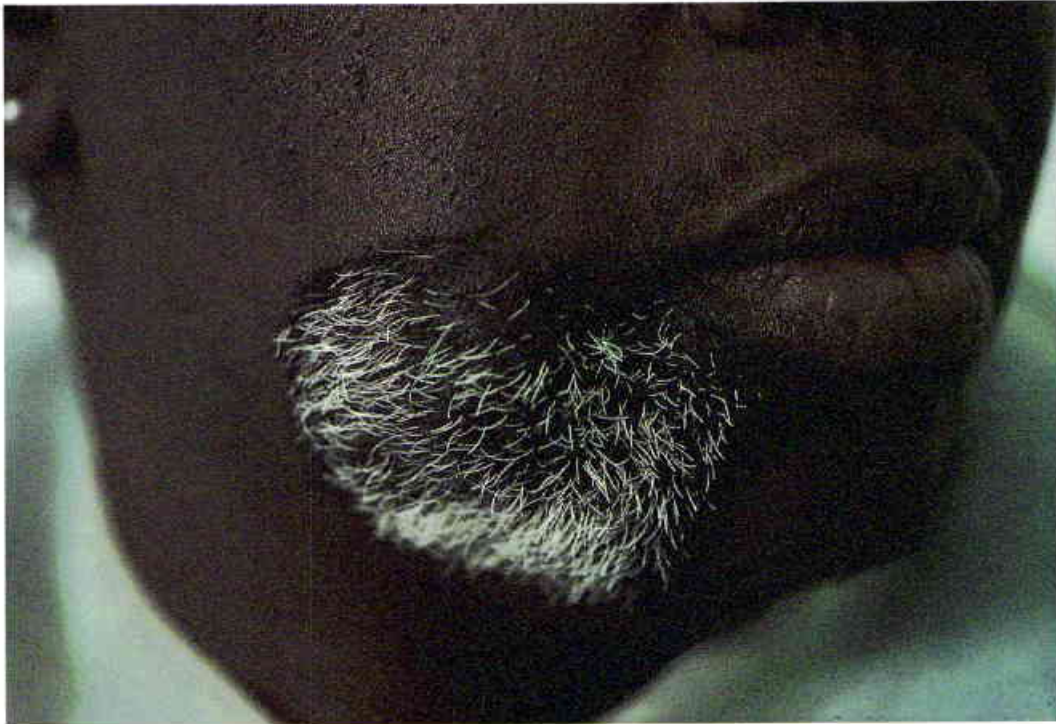
5

Upward extension of the flap onto the cheek. The platysma flap will also reach the posterior sulcus and the tonsillar area.





6  
Posterior flap rotation into the mastoid area.



7

Thirty-five-year-old female with a benign congenital hairy nevus of the cheek.  
(Case of J.B. McCraw)



8

The platysma muscle is elevated to the level of the facial vessels. A skin "island" is carried from the lower neck.





9

Appearance at six years. The platysma myocutaneous flap provides an acceptable contour restoration and a fair color match.

# PLATYSMA

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