

The Elements of Morphology: Ear—An Initial Approach for the Incisura

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The recent series of articles describing human surface anatomy included an article on the ear by Hunter et al. [Hunter et al. (2009); Am J Med Genet Part A 149A: 40–60]. That publication did not include the incisura. This article provides an approach to assessing the incisura in the hope that others may find it useful and/or modify it as appropriate. © 2010 Wiley-Liss, Inc.

Key words: ear; incisura; dysmorphology

INTRODUCTION

Following a recent effort to standardize the description of human surface anatomy a series of articles that summarized the consensus was published [Allanson et al., 2009a; Biesecker et al., 2009; Carey et al., 2009; Hall et al., 2009; Hennekam et al., 2009; Hunter et al., 2009]. The article on the ear [Hunter et al., 2009] did not include the incisura. This omission became apparent during preparation for a systematic study of the ear in Cornelia de Lange syndrome [Hunter et al., submitted for review] and a standardized assessment that uses a series of photographic scales for judging the length, width and shape of the incisura was developed. This article provides that method in the hopes that others may find it useful and/or modify it as appropriate.

METHOD

The author was involved in developing the photographic scales that have been suggested for use in the description of other surface anatomical parts of the ear. The same series of photographs, a sample of convenience of colleagues and staff, was used. Those ears were evaluated and examples were selected to represent the subjective assessment of the average, reduced, and increased length and width of the incisura. The same process was used to demonstrate the common parallel relationship of the anterior and posterior lateral margins, as well as the “V” and “A” forms. An uncommon “open” lower margin of the incisura is also described and illustrated. A number of photographs from patients have been used to illustrate the range of findings.

The same format and style of definitions that were used in the elements of morphology series [Allanson et al., 2009b] was applied here.

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ANATOMY

Incisura

The narrowed downward continuation of the conchal space bounded anteriorly by the borders of the tragus, posteriorly by the antitragus, and along its lower lateral margins and inferior boundary by the connection between the first two. The upper boundary is a somewhat arbitrary line crossing from the apices of the antitragus and the tragus (Fig. 1).

DEFINITIONS

Incisura, Length, Long

Definition. Length of the incisura from the upper to lower border greater than that observed in the average population (Fig. 2A). *subjective*

Comment. The subjective interpretation of length of the incisura may be influenced by its relative width.

Synonym. Incisura, length, increased.

Incisura, Length, Short

Definition. Length of the incisura from the upper to lower border less than that observed in the average population (Fig. 2C). *subjective*

Comment. The subjective interpretation of length of the incisura may be influenced by its relative width.

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FIG. 1. The shaded area in this normal ear demonstrates the area of the incisura.

Synonym. Incisura, length, reduced.

Incisura, Open

Definition. Lower border of the incisura opens directly onto the side of the head as there is lack of definitive ear components between the incisura and the side of the face (junction of the ear to face) (Fig. 3A,B). *subjective*

Comment. Often there appears an associated connection of the lobe to the face behind (Fig. 3B), rather than its more usual location in front (Fig. 3A) of the inferior incisural margin.

Incisura, Shape, "Λ" or "Inverted V"

Definition. Anterior and posterior walls of the incisura significantly closer at the superior than at the inferior border of the incisura (Fig. 4C). *subjective*

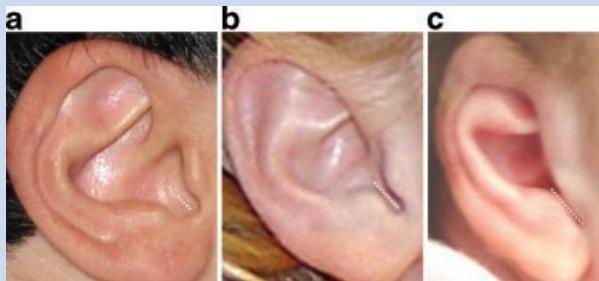


FIG. 2. These photographs provide examples of the range of variation in length of the incisura; (A) is short, (B) average, and (C) long.

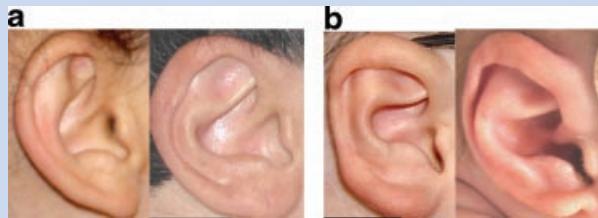


FIG. 3. These photographs illustrate the difference between (A), the normal lower margin of the incisura, and (B), the open form where there is lack of definitive ear components between the incisura and the side of the face.

Comment. This shape can compromise assessment of the width of the incisura.

Incisura, Shape, "V"

Definition. Anterior and posterior walls of the incisura significantly closer at the inferior than at the superior border of the incisura (Fig. 4A). *subjective*

Comment. This shape can compromise assessment of the width of the incisura.

Incisura, Width, Narrow

Definition. Width of the incisura from the anterior to posterior border less than that observed in the average population (Fig. 5A). *subjective*

Comment. This aspect may be difficult to assess in instances where the anterior and posterior walls of the incisura are not parallel, and thus the incisura is either "V" or Λ shape (see above; Fig. 4A,C).

Synonym. Incisura, width, reduced.

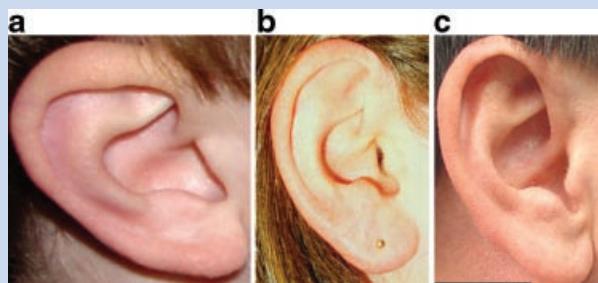


FIG. 4. These photographs provide examples of the variation in basic shape, or relative orientation of the anterior and posterior walls of the incisura; (A) is "V"-shaped, (B) is the typical "U"-shape, and (C) is the less common inverted "V" or Λ." "V"-shape.

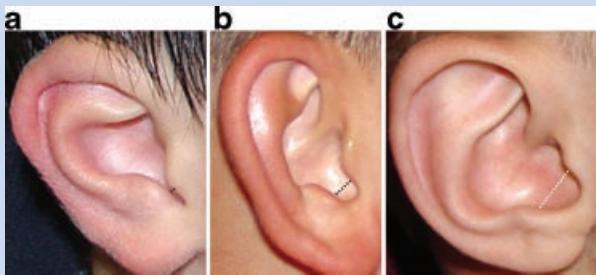


FIG. 5. These photographs provide examples of the range of variation in width of the incisura; (A) is narrow, (B) average, and (C) wide.

Incisura, Width, Wide

Definition. Breadth of the incisura from the anterior to posterior border greater than that observed in the average population (Fig. 5B). *subjective*

Comment. This aspect may be difficult to assess in instances where the anterior and posterior walls of the incisura are not parallel, and thus the incisura is either "V" or "Λ" shape (see above; Fig. 4A,C).

Synonym. Incisura, width, increased.

DISCUSSION

All the assessments of the incisura described herein are subjective and were established using a subjective assessment of ear photographs from a sample of normal individuals. Additional information, especially as to some of the shape variations, was incorporated from a patient sample. The averages were based on the sample from normal individuals. A more methodical assessment using the controls from a study comparing the ears in normal individuals with those with Cornelia de Lange syndrome [Hunter et al.,

submitted for review] provides some initial evidence that the chosen average photographs have some validity. However, given that assessment remains subjective, notwithstanding the use of a photographic scale, it is suggested that authors carrying out systematic reviews of a specific syndrome should also use a concurrent series of normal control ears.

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