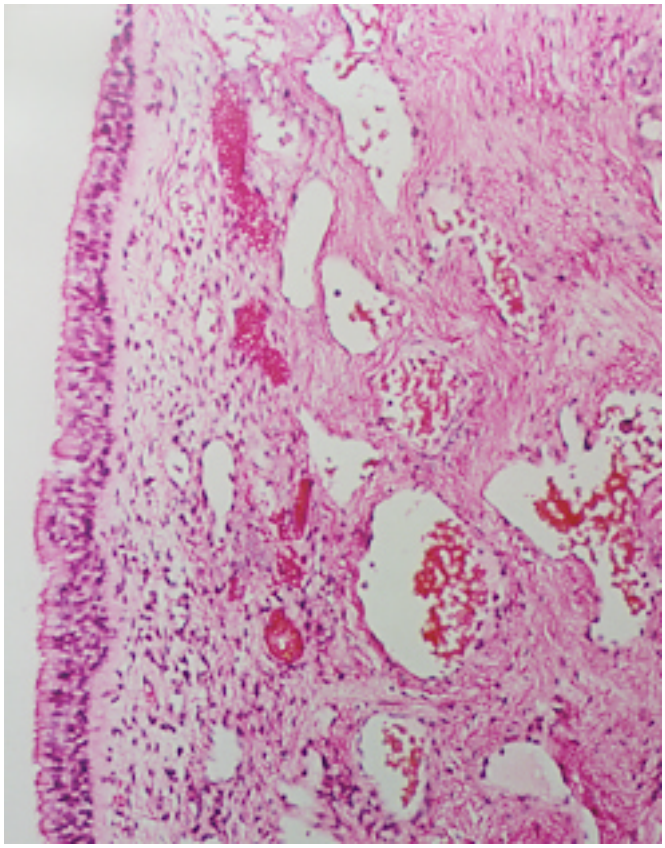
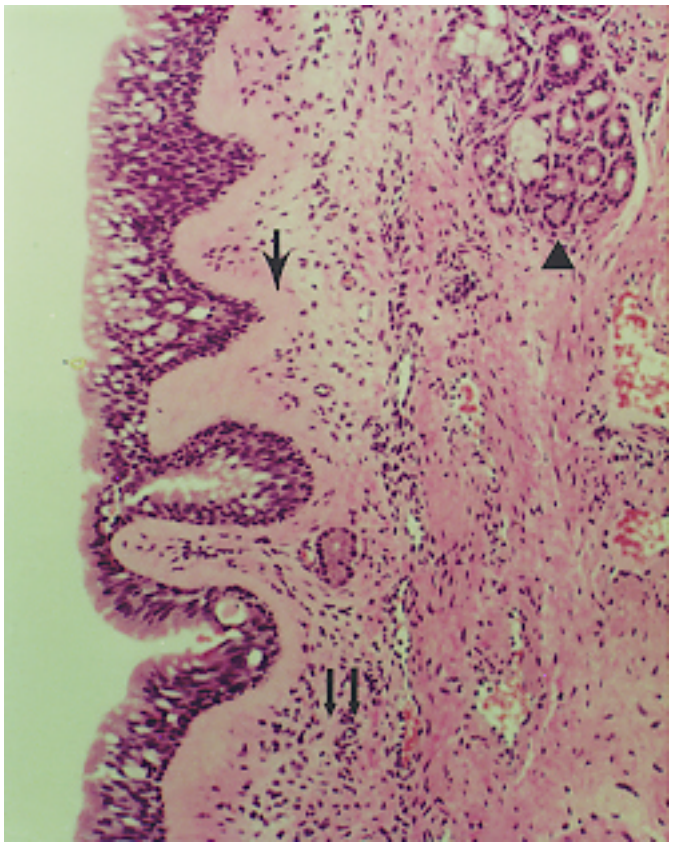
Turbinates

There are three turbinate bones in each side of the nose with the inferior being the largest. Each is covered with ciliated columnar respiratory mucosa and there is a rich submucosal vasculature especially in the inferior turbinate. Mucous glands are prominent. The tissue of the inferior turbinate is semi-erectile with the turbinate swelling each hour or so and sometimes partially blocking one side of the nose.

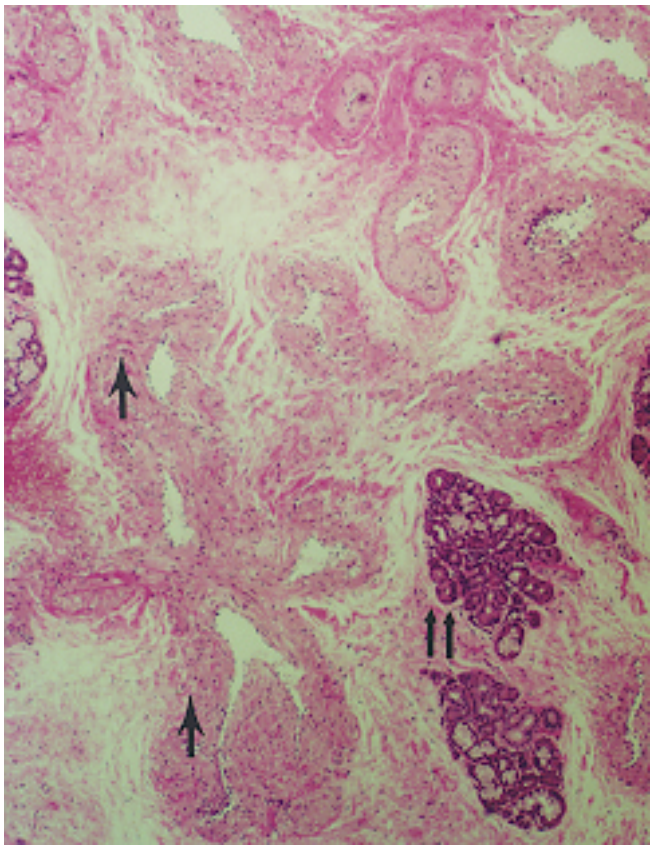
Inferior turbinate, showing profuse vasculature throughout fibrous tissue, and respiratory epithelium. Mild inflammatory response.

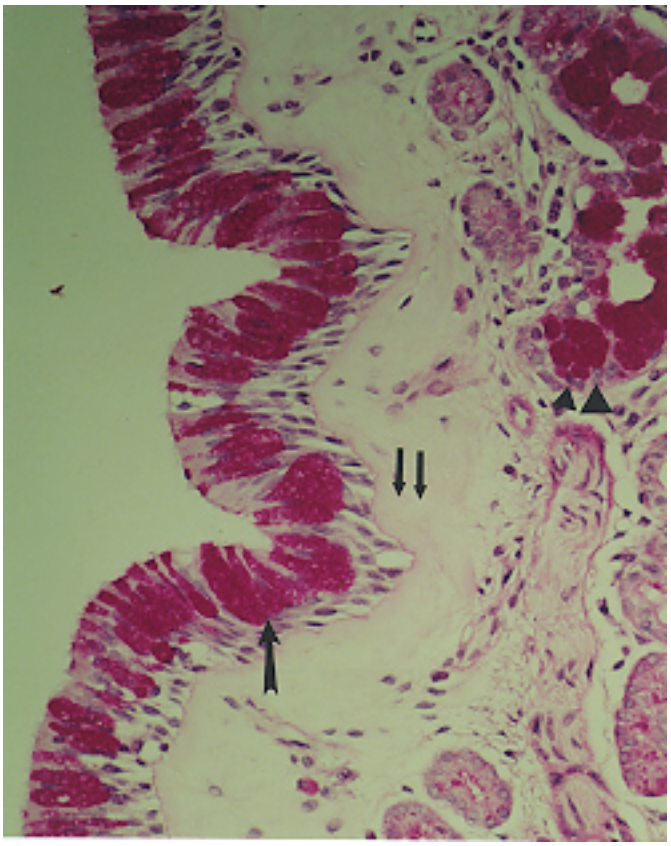


Inferior turbinate: note prominent basement membrane (large arrow), a finding particularly apt to be present in patients with nasal allergy. Mucosa shows goblet cells. A chronic inflammatory reaction is present (double arrows). Glandular elements (triangle) are scattered generously throughout the turbinate. Plastic section.

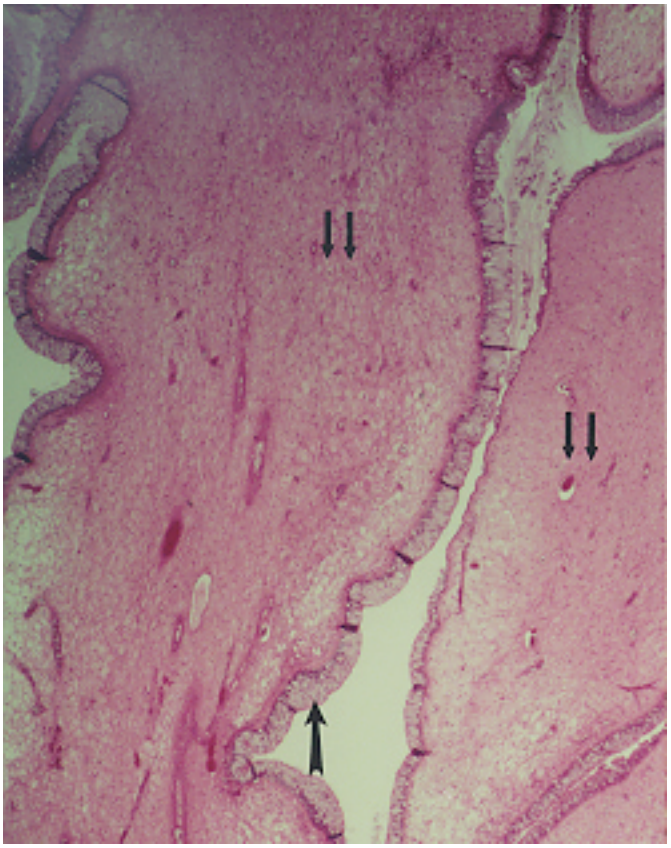


Inferior turbinate, note prominent muscular walls of vessels (large arrows). Blood spaces thus are more than just venous spaces and do contract regularly causing periodic changes in size of the turbinate. Glandular tissue is characteristic (double arrows).



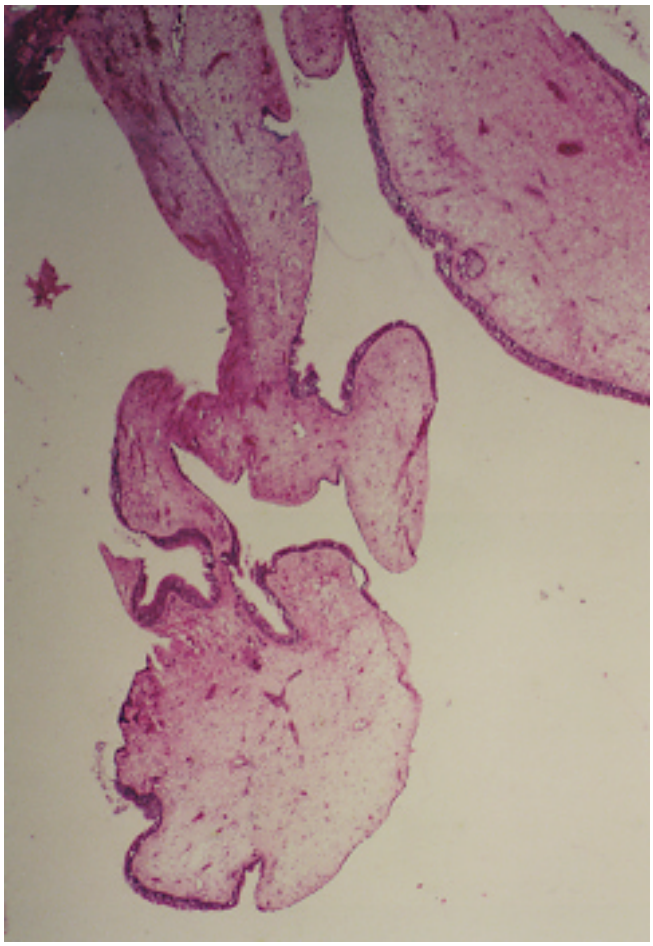


Inferior turbinate, PAS stain. With this stain mucus stains magenta and here is shown the rich mucoid-secreting nature of the respiratory mucosa (single arrow) and also submucosal mucoid glands (triangles) and their ducts. Note very thick basement membrane (double arrows).



Inferior turbinate, redundant, hyperplastic polypoid change in turbinate soft tissue (double arrows). The vasculature is lost, the mucosa is mucus-filled (single arrow). Such tissue is functionless and obstructs the nose.

Inferior turbinates. Changes which produce, grossly, a large and obstructive turbinate. Microscopically, the vessels seen in previous sections are lost and, clinically, the turbinate no longer has its semi-erectile character.



Clinical Aspects

Hyperplasia is a common change in the inferior turbinate and the tissue may become so large as to obstruct the nose, and is functionless. The posterior end of the turbinate may become bulbous and pitted and because of its bluish color as seen in the postnasal mirror, it is called a "mulberry" tip. Infection is seen microscopically in many turbinates although ulceration or infection is not apparent clinically. Many patients are troubled by nasal obstruction caused by hyperplastic turbinates, a condition brought on by allergy or infection. Treatment by surgical resection of a portion of the turbinate is extremely effective. Other surgical treatments such as laser evaporation and fulguration are also used.

The middle turbinate may develop changes similar to those seen in the inferior turbinate but more uncommonly. The middle turbinate is part of the ethmoid labyrinth and occasionally an air cell (concha bullosa) is found in the turbinate enlarging it and contributing to nasal obstruction. Occasionally such an air cell fills with mucus (mucocele). These changes, if symptomatic, may be treated surgically.