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Clinical Importance of Little's Area (Kiesselbach's plexus) - A Literature Review.

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Abstract:

The anterior region of the nasal septum. It has a rich capillary supply, called Kiesselbach's plexus, and is a common site from which nose bleeds arise.

Kiesselbach plexus (**Kiesselbach area** or **Little's area**) is a vascular region of the anteroinferior nasal septum that comprises four arterial anastomoses: Anterior ethmoidal artery- a branch of the ophthalmic artery, Sphenopalatine artery- a branch of the maxillary artery, Greater palatine artery-a branch of the maxillary artery and Superior labial artery (septal branches)- a branch of the facial artery. The importance of this plexus lies in the fact that 90% of epistaxis occur in this area

Little's area, also known as Kiesselbach's plexus, is a vascular area in the nose that's clinically important because it's a common site of nosebleeds and is responsible for warming inhaled air.

Little's area is a common site of epistaxis (nose bleeds) in both paediatric and adult cases. So this article is focusing on clinical importance of Little's Area, Kiesselbach's plexus.

Key words: Little's Area, Kiesselbach's plexus.

Introduction:

Little's area, also known as Kiesselbach's plexus, is a region in the nose that's prone to bleeding. Little's area (also known as Kiesselbach's plexus) is found on the anterior nasal septum and is an anastomosis of 5 arteries: anterior ethmoidal artery, posterior ethmoidal artery, sphenopalatine artery, greater palatine artery, and the septal branch of the superior labial artery. [1]

The anterior part of the septum, known as Little's area, is richly endowed with blood vessels and is the source of most nose bleeds. Little's area is an area of confluence of the labial, sphenopalatine, and ethmoidal arteries known as Kiesselbach's plexus.[2]

Kiesselbach's plexus is an anastomotic arterial network (plexus) of four or five arteries in the nose supplying the nasal septum. It lies in the anterior inferior part of the septum known as **Little's area**, **Kiesselbach's area**, or **Kiesselbach's triangle**. It is a common site for anterior nosebleeds.[3]

Kiesselbachs triangle was discovered and first described by a scientist James Lawrence Little in 1879 thus named after him as Little's area. It was later comprehended by a German otolaryngologist Wilhelm Kiesselbachs who studied and described further the plexus in 1884 and thus also named after him as Kiesselbachs area, triangle/plexus. As of today these names Little's area, Kiesselbach's triangle/plexus are used synonymously. The Little's area is among vital topics in anatomical education while dealing with Head and Neck Anatomy at undergraduate level. However up to date it is one of the most forgotten or neglected topics to be taught by medical educators while teaching undergraduate.[4]

Aim & objective:

To study the details & clinical significance of Little's Area, Kiesselbach's plexus.

Material & Methods:

Method: Literature Review

Structure:

Kiesselbach's plexus is an anastomosis of four or five arteries:

1. The anterior ethmoidal artery, a branch of the ophthalmic artery, a branch of the internal carotid artery.
2. The sphenopalatine artery, a terminal branch of the maxillary artery, a branch of the external carotid artery
3. The greater palatine artery, a branch of the maxillary artery, a branch of the external carotid artery.
4. A septal branch of the superior labial artery, a branch of the facial artery, a branch of the external carotid artery.
5. A posterior ethmoidal artery, a branch of the ophthalmic artery, a branch of the internal carotid artery. There is contention as whether this is truly part of Kiesselbach's plexus. Most sources quote that it is not part of the plexus, but rather one of the blood supplies for the nasal septum itself.

It runs vertically downwards just behind the columella, and crosses the floor of the nose. It joins the venous plexus on the lateral nasal wall. [5]

Function:

Kiesselbach's plexus supplies blood to the nasal septum.[6]

Supplies oxygenated blood to the nasal septum, the wall that separates the right and left sides of the nose.[7]

Blood supply

Receives blood from both the internal carotid artery (ICA) and the external carotid artery (ECA)[8]

Common site of nosebleeds

90% of anterior nosebleeds originate in Little's area, making it a common site of nosebleeds in children and young adults.[9]

Risk factors

The location of Little's area in the nasal cavity makes it susceptible to environmental conditions like heat, cold, and low or high moisture.

Discussion:

Clinical significance:

Ninety percent of nosebleeds (epistaxis) occur in Kiesselbach's plexus, whereas five to ten percent originate from Woodruff's plexus. It is exposed to the drying effect of inhaled air. It can also be damaged by trauma from a finger nail (nose picking), as it is fragile. It is the usual site for nosebleeds in children and young adults. A physician may use a nasal speculum to see that an anterior nosebleed comes from Kiesselbach's plexus.[10]

A common mnemonic used to remember the arteries of the Kiesselbach's plexus is "**Kiesselbach** drives his **Lexus** with his **LEGS**" (superior **L**abial artery, anterior and posterior **E**thmoid artery, **G**reater palatine artery, **S**phenopalatine artery).

Its main function is to adjust the temperature of the air inhaled through the nose, via heat exchange between the air and the arteries.

Conclusions:

1. Little's area in conjunction with other parts of nasal cavity, acts to perform other functions that include; olfaction, forms passage to respiratory airway, filtering and ciliary mechanism, vocal resonance in sinuses, nasal reflex functions-sneezing.
2. It is the common site for nosebleeds in children and young adults.
3. The Kiesselbach plexus supplies the nose with a relatively large quantity of blood in order to adjust the temperature of air entering the body.

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