Introduction

Identification based on dental information is a highly efficient, reliable, and rapid procedure. Knowledge in rugoscopy,[3,4] chelioscopy,[5,6] bite marks,[7,8] radiographs,[9,10] tooth DNA analysis[11-13] and so on, plays an important role in medico legal investigation. However, still many questions in the field of Forensic Odontology remain unanswered.[3,14] One feature is postmortem pink teeth. Further studies are required to conclude the manner of death by looking into postmortem pink tooth. The appearance of postmortem pink teeth is a common phenomenon that can be noted by the forensic personnel during exhumation.[14] Usually the pink appearance is more pronounced at the region of the cementoenamel junction[5,14,15] and more intense among the anterior teeth than the posterior teeth.[3,15] Bell, in 1829, was the first person to describe pink teeth in a postmortem victim.

He noted the appearance of pink teeth in the individuals where the cause of death was drowning. Since then, there have not been many reports published in the literature regarding postmortem pink teeth.[14] In 1953, Miles et al., described the appearance of postmortem pink teeth in two individuals where the cause of death was drowning and burns.[15,16] Van Wyk,[17] in 1989, also observed pink teeth where the cause of death was drowning, fire, and stabbing. Kirkham et al.,[18] observed pink teeth during postmortem and mentioned that many cases were associated with decomposition in a moist environment.

Reviewing the literature reveals that the exact cause for the appearance of forensic pink teeth as well as the phenomenon behind its occurrence is still clearly not understood.[14,16,17,19] However, trauma and moist environment may play a role in its appearance. We present two cases of pink teeth in exhumed bodies.

The main aim of our study was to note the changes to pink teeth, histologically.

Case Reports

Case 1

A male individual aged 28 years was found dead. The medical investigator reported that death had occurred...
12 days earlier. The cause of death was registered as drowning. One maxillary central incisor [Figure 1] was obtained from the deceased individual’s body.

Case 2
A male individual aged 45 years was found dead. The medical investigator reported that death had occurred eight days earlier. Death was due to hemorrhage and shock. A maxillary central incisor tooth [Figure 2] was obtained from the deceased individual’s body.

Both samples were obtained following oral consent from the medical officer and police investigator.

One tooth was subjected to ground section and the other to decalcification.

The ground section revealed red–brown discoloration of the dentin [Figures 3 and 4], whereas, the hematoxylin and eosin (H and E)-stained section does not show any notable changes [Figure 5].

Discussion
Postmortem pink teeth phenomenon is a condition that may be noted among deceased individuals due to the development of intrapulpal pressure. Various factors including physical trauma and a moist environment play a major role in the development of the pink appearance. In forensic literature, authors who reported cases of pink teeth, note the time delay between death and development of pink appearance. They attribute the cause of discoloration to red blood cells entering the dentin. However, as red blood cells are 7.5 microns in diameter and dentinal tubules are only 3 micrometers in diameter, it is the lysis of erythrocytes and the products of erythrocytes like hemoglobin, porphyrins, and hemosiderins, together with bile and related pigments that are responsible for the pink appearance. The literature mentions the variation in the intensity among different teeth and also the regions of the teeth. The appearance of pink teeth can be noted among incisors, canines, and premolars. Within the

![Figure 1: Pink appearance along the cervical region of the tooth](image1)

![Figure 2: Pink appearance along the cervical region of the tooth](image2)

![Figure 3: Ground section of teeth showing dentin](image3)

![Figure 4: Ground section of teeth showing pulp](image4)
tooth, the root exhibits more intense discoloration than in the coronal region.\[^{17,18}\]

In our case, we noted a similar variation in the color intensity from region to region. We noted more intense discoloration along the cervical region compared to the incisal region. Van Wyk, in 1989, studied the ground sections of postmortem pink teeth and noted the red–brown discoloration of dentin. Similar to the study by Van Wyk, the ground section of pink teeth in our case showed red–brown discoloration in the dentin but not in enamel and cementum.

We conclude that the pink appearance is due to the derivative products of hemoglobin entering the dentinal tubules.

**Conclusion**

Pink teeth phenomenon may be noted in dead individuals, where great physical trauma is noted. Moist environment also plays a role as a triggering factor. However, the exact cause of the coloration remains unexplained. Large scale studies are needed to ascertain the exact cause for the appearance of the pink color and the variation in the intensity of the hue.

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