Case Report

# **Bleeding Bite Marks: Post Mortem Ant Bite Injuries**

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#### Abstract

Ant bite marks considered to be artefacts are abrasions like injuries with irregular, serpiginous margins. These postmortem injuries bleed passively from the dependent congested parts of the body. This bleeding tendency in some cases poses a challenging task while interpreting the injuries present on the body. The area of recovery of the body, margins of the injuries along with presence of crawling or dead ants over the body help in deducing the causative factor of such injuries. We present this case discussing the features of ant bite marks and their bleeding propensity.

Key words: artefacts; postmortem injuries; ant bite marks;

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# Introduction:

Many artefacts are introduced over the body after death unintentionally which pose a challenging task for the forensic pathologist to interpret and opine. One such important artefact seen in abandoned corpses is a marks produced due to ant bites. Ants can attack the body soon after death before putrefaction begins. The common places for ant attack leading to postmortem injuries are around the moist areas of body - eyelids, lips, axilla and genitals. The feeding action of ants can cause many irregular, serpiginous, scalloped areas of superficial skin loss, small punctate and scratch-type lesions often observed on the body, which are the result of postmortem ant bites.<sup>1-3</sup> Their margins and lack of bleeding or absence of inflammatory changes make them easily recognizable.<sup>4</sup>

In our routine forensic practice, we witness many cases with postmortem ant-bite marks

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and with much alacrity we are able to distinguish them from ante mortem injuries by applying the knowledge and theories described in many text-books.

Occasionally one comes across, cases in which the appearances and findings are astounding, confounding than what we anticipate and confuse us as all of us have gained our present knowledge and wisdom in the hard schools of mortuary.

In the present case of hanging death, the bleeding from postmortem ant bite marks had been so profuse and running down the body parts (face and thighs) that they could have been actually mistaken for ante mortem injuries.

# **Case Report:**

A 34 year old female with history of death due to hanging in her residence was brought to mortuary for postmortem examination. According to statements narrated by the relatives, they brought down the body from the hanging position, and noted massive bleeding from eyes, mouth and ears. After laying down the body, they wiped out the blood from the face. But to their surprise, the bleeding continued from the same sites which naturally raised doubts in the

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minds of the relatives regarding the manner of death. When the police reached the spot and inspected the body, they too noticed blood in the face and voiced the same doubt.

At autopsy: On external examination, moderately nourished body of a female with postmortem hypostasis noted over the back of the body. Rigor mortis was present all over the body. The finger and toenails showed bluish discolouration. Blood-stained froth was oozing out from nostrils. Dried blood-stains were noted over the face near both eyes, right cheek and around lips (Fig. 1). The face was thoroughly washed off with water and sponged clean. Multiple postmortem abrasions were seen over the breast folds, left flank and outer aspect of right side of chest (Fig 2 & 3). These were interpreted as ant bite marks. The muco-cutaneous junctions of eyelids and lips clearly showed postmortem ant bite marks.

Fig 1: Dried blood stains over the face



Fig. 3: Multiple postmortem abrasions over left flank



Neck injuries: The incompletely encircling, obliquely placed ligature mark was measuring 26 X 3 cm seen over the front, back and left side of upper part of neck (Fig 4). The ligature mark was 7 cm below the left mastoid, 3.5 cm below the chin and 8 cm above the suprasternal notch. Base of the ligature mark was pale and parchmentised. Bloodless dissection of the neck revealed no extravasation of blood in the superficial or deeper planes of the neck.

Pertinent Internal findings: Multiple petechial hemorrhages were noted over the surface of the heart. Lungs were congested and edematous associated with congestion of other visceral organs. Chemical analysis of viscera revealed absence of poison.

Histo-Pathology of the skin bits taken from the right cheek and chest ruled out ante mortem injury.

The cause of death was opined as due to hanging.

# Fig. 2: Multiple postmortem abrasions over the breast folds



Fig 4: Neck Examination (External)



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# **Discussion:**

Ants are eusocial belong to the family Formicidae of the order Hymenoptera. They are one of the world's dominant insect groups. They flourish in most environments and form 15-25% of the terrestrial animal biomass.<sup>5</sup>They evolved from wasp like ancestors between 110 - 130 million years ago.<sup>6,7</sup>Ants occupy almost every landmass on earth for their habitat including leaf litter, soil, trees, house, dead logs and even abandoned dead bodies. But they are absent in Antarctica and few inhospitable islands.<sup>5</sup> These ants thrive in most ecosystems because of their social organisation and ability to modify habitats, tap resources and defend themselves.<sup>8</sup> Most species of ants are Omnivorous which eat seeds, nector and other invertebrates. Army ants are carnivorous and they eat worms, spiders, lizards and even they feed on dead bodies.<sup>9</sup>The red ants found in India are one of the dangerous ants which leaves a small red, painful mark which causes irritation.<sup>10</sup>Their feed on dead bodies leaves a post-mortem lesion in the form of abrasion which poses a difficult task for the forensic pathologist while interpreting these lesions.

While searching for relevant literatures regarding ant bite marks, we observed, much about the morphology of the lesions and how to distinguish postmortem ant bite marks from ante mortem injuries. The search of Forensic Pathology literature stressed about "No active bleeding from postmortem ant bite mark". Campobasso CP et al <sup>11</sup> also noted the absence of bleeding associated with the ant marks at autopsy.

But Tedeschi<sup>12</sup> has mentioned about the active bleeding from the ant bite marks. He coated that "Ants may eat into the exposed skin of cadavers, producing extensive superficial lesions, which may be accompanied by considerable hemorrhage." This view was supported by Francesco Ventura et al<sup>13</sup> in their study. They opined that the erosive action due to formic acid on the epidermis provokes the flow of blood from the postmortem ant bites and the drying creates reddish colored, hard, abrasion like injuries. Byard RW opined that the skin damage caused by the ant bites is mostly not associated with bleeding except passive escape of blood from small vessels in the tips of traumatized dermal papillae.<sup>14</sup> He also opined that the ant trauma to the dependent congested parts of the body leads to passive bleeding. Heath KJ and Byard RW<sup>15</sup> in their research also pronounced that the bleeding can occur from the ant bite marks.

# **Conclusion:**

We must always bear in mind, the differential diagnosis in case of bleeding lesions. It must kindle our interest to explore the possibilities of linking this bleeding from postmortem ant bite mark with asphyxia or postmortem fluidity of blood or even sometimes postmortem gravitational leakage of blood. While considering these factors we must consider the site of bleeding and place of the dead body which aid in the proper interpretation of these artefacts.

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