ORIGINAL RESEARCH PAPER

Volume-6 | Issue-10 | October-2017 | ISSN No 2277 - 8179 | IF : 4.176 | IC Value : 78.46

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

Search and Recovery of Human Remains: A Review

Dental Science

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ABSTRACT

Identification of the human body depends on the recovery of the skeletal remains. Search of these skeleton remains is a tendentious process. Thus, the searchers involved should be trained precisely as what to discover and from where to discover. This paper discusses various aspects of search and recovery process, the stages, methods, and fundamental aspects of the search techniques. The training of the searchers should be step-wise process so that they get accustomed to the human bones and their speedy recovery process.

KEYWORDS

Human remains are often discovered accidentally by individuals who are often hunting, hiking, or wandering through the area.[1] These remains can be easily discovered. However if remains were to be searched in an area then a variety of factors decide its recovery.

The discovery of the human remain depend on the fact whether or not efforts were made to conceal the remains. The skeletal remains by itself often blend and conceal into the baseline environment obscuring the view.[2]This becomes even more problematic if there is scattering of skeletal remains by predators.[3] Meticulous training of the searchers is mandatory as new and untrained searchers may not be able to correctly identify the human remains.

The most important consideration while training a searcher is to keep in mind that one is essentially looking for rather small objects in a large landscape.

The search for human remains can be divided into two separate stages: a) search planning and b) the preparation and management of field teams. In planning stage the most important thing is health and safety of the searchers and placing the correct resources in the correct place. Thus, a search planner must do a great deal of planning before the search. This includes training about the terrain to be searched, the size of the search area, weather conditions, and the time available to search, whether or not the search area will involve private property.[4] Here, in this stage even the searchers need to be educated about what they might be looking for in the specific search event and how it may increase the chances of recovery.

The searchers also needs briefing about the various stages of human decomposition enumerated as follows: stages of decomposition (pre-skeletonization and post-skeletonization stage), environmental factors influencing the process (temperature and degree of moisture), location of the body (above or below the ground), the factors that may limit overall discovery of remains (topography, and partially covered remains by the dense vegetation).[5]

In preparation stage an initial ground survey needs to be done which helps searchers to accustom themselves to the visual and textural appearance of the topmost layer of soil and the vegetation present. After which briefing about the missing bones sizes, possible colour change, cracking, bleaching, flaking, and eroding of skeletal elements due to environmental effects would help in speedy recovery[2].

The searchers can be updated about human versus non-human bones. In case of confusion, a forensic anthropologist can assist them in identification; or the safest way out is to collect all the bones and sort it out later in the laboratory, with the guidance of the anthropologist. All the bones need to be collected in a labelled bag with the information of the location of the discovery. It is important to document the orientation, location and time of bone collection.[6] Photograph needs to be taken at all times.

The search of the human remains principally involves search and rescue personnel who use principally three types of search techniques described as follows.

Strip Search: It is used for searching a large area, looking for a large object e.g. whole body skeleton. Several explorers will stand in one long line and all walk the same direction. Stakes and string can also be used to create "lanes" for which each explorer would be responsible.

Spiral Search: It is used looking for an object that is suspected to be a specific distance from another e.g. a small bone moved away from the whole skeleton. A stake in the center with a string attached will assure proper distance and avoid overlapping already searched areas or missing areas not yet searched.

Grid Search: This is the most thorough search technique. It is similar to a strip search but also done in opposite directions. Here the searchers walk in a tight, closely spaced line with a field of vision overlap. The searchers mark notable findings with flags, which are then followed up by more experienced searchers or experts.[7, 8] This technique is more applicable in case of large fields.

The two crucial components of search team preparation are detection and recognition of potential clues without contaminating the scene. The integrity of evidence needs to be maintained at all times.[9]

There are few other important considerations that need to be briefed to the searchers for early recovery. Animal scavenging is an important consideration. The existence of any evidence of scavenging should automatically direct the searchers to the nearby animal imprints. If in case few bones are missing after location of the skeleton then sweeping the field area in close proximity can be done after clearing of all remains and evidence. Then the area can be divided into strips and six inches of the top soil from each strip can be removed. This top soil is strip by strip collected, in fine sifter. A careful anthropological sift must be made through the debris to trace the body parts.[8]

The searcher also needs to be updated about human vs non-human bones. The decision could be quite challenging for the searchers in the fields to promptly decide if it's human or not. Thus, to avoid confusion all the bones found in the fields need to be collected in a labelled bag. But they should be instructed to document the orientation, location and time of bone collection. Photographs needs to be taken at all times in an unaltered condition of the scene with the scale and documented orientation.[9] A forensic anthropologist, can accompany the searchers in the fields during the search to direct them. In case of absence during the search, the anthropologist can assist the team in the lab to determine the type of bone.

The training process of the searchers is a tendentious task. Here, one should consider the fact that they are ignorant about the human bones and the entire process of decomposition. Thus, step-wise preparation should be done. It is always better to mock search before deploying them to do the real case.

References

1. Morton, Robert and Lord, Wayne, Taphonomy of Child-Sized Remains: A Study of Scattering and Scavenging in Virginia, USA, Journal of Forensic Science, May 2006, Volume 51, No. 3.
2. Powell, Katherine, J, The Detection of Buried Human Skeletal Remains in the Australian Environment, University of Adelaide, Australia, 2006.

3. Young A, Stillman R, Smith M, Korstjens A. Applying Knowledge of Species-Typical Scavenging Behavior to the Search and Recovery of Mammalian Skeletal Remains. J Forensic Sci 2015;61(2):458-66.
4. Shamblin, Charles, An Application of Geographic Information Systems (GIS): The Utility of Victim Activity Spaces in the Geographic Profiling of Serial Killers, Thesis, University of Tennessee, 2004.
5. Vass, Arpad: Human Decomposition Time Since Death Burials, Lecture, University of Tennessee Forensic Anthropology Center, August 2007
6. White, Tim and Folkens, Pieter, The Human Bone Manual, Elsevier Academic Press, 2005
7. Dirkmaat, Dennis and Adovasio, JM, The Role of Archeology in the Recovery and Interpretation of Human Remains from an Outdoor Forensic Setting, CRC Press, 1977
8. DuprasWhite, Tim and Folkens, Pieter, The Human Bone Manual, Elsevier Academic Press, 2005
9. Sarvesvaran R, Knight BH. The examination of skeletal remains. Malays J Pathol 1994;16(2):117-26.