3.

La macerazione cadaverica

La catena di custodia dei reperti

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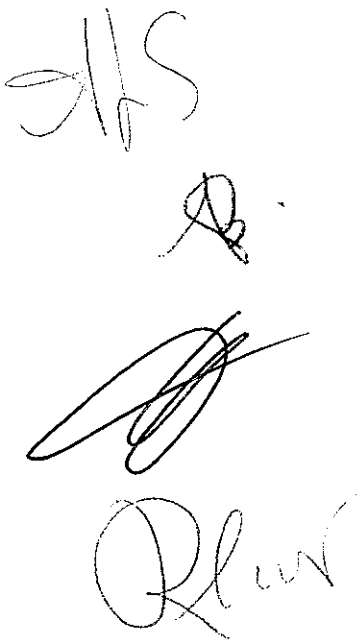
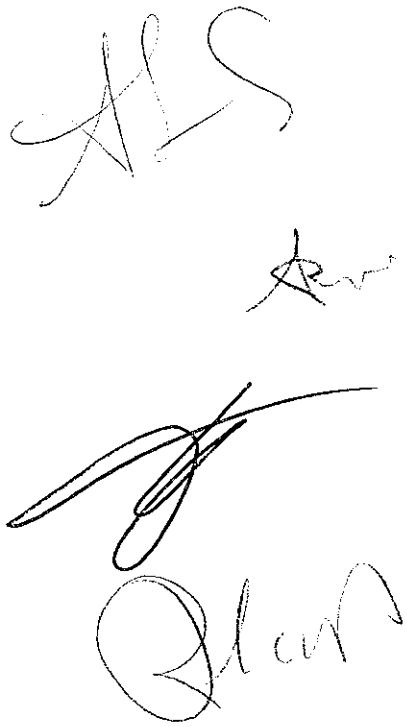
3. Prova informatica
   Windows



2. Prova informatica
   Il pacchetto Office



2.

I fenomeni tanatologici

Colorazione routinaria nel Laboratorio di Istopatologia forense

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Il riscontro diagnostico

Metodi di estrazione del DNA nel Laboratorio di Genetica forense

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   La posta elettronica certificata

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Il repertamento di campioni biologici, quali cautele deve osservare il tecnico di obitorio

Test forensi nella ricerca e determinazione delle tracce di sangue

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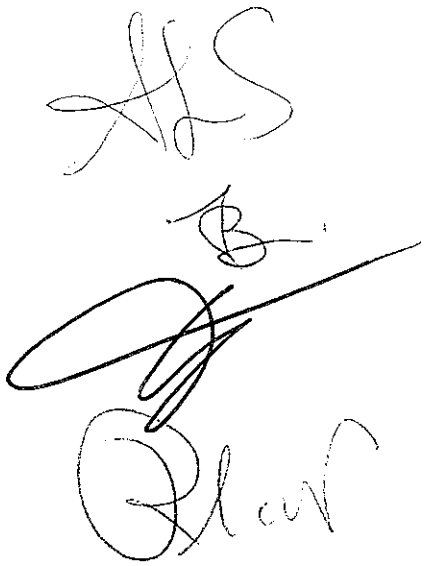
8. Prova informatica

Come si crea una tabella di dati con excel



Fourth Edition

KNIGHT's Forensic Pathology

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in relation to the documentary certification of deaths, but the same confusion sometimes occurs among pathologists, especially those who are not habitually involved in medico-legal cases.

The mode of death refers to an abnormal physiological state that pertained at the time of death: for example, 'coma', 'congestive cardiac failure', 'cardiac arrest' and 'pulmonary oedema'. These offer no information as to the underlying pathological condition and should not be used as the definitive cause of death unless further qualified by the more fundamental aetiological process.

In most cases, the mode is unhelpful and immaterial in describing and understanding the cause of death, and some modal terms are quite useless, such as 'syncope' or 'cardiorespiratory failure'. Even 'bronchopneumonia' is such a common terminal event in numerous diseases that, used alone, it conveys no information about why the patient died. The British Registrar General has recently requested that it should be omitted from death certificates, the basic condition being preferable and sufficient for statistical purposes.

In addition to the mode and cause of death, there is also the *manner* of death, which in the countries with a coronial system, is not really a medical decision. Manner refers to the circumstantial events, such as 'homicide, suicide, accident or natural cause' and is a legal or administrative categorization.

The recommendations of the World Health Organization, as given in its publication *The Medical Certification of Death*, should be followed to improve both the comprehension and statistical accuracy of the cause of death. Even this booklet is inconsistent with the practice of certification in many advanced countries, in that it requests the doctor to enter the 'manner' of death (for example, homicide, accident or suicide) which, for example in the UK, is the prerogative of the legal authorities after full investigation.[10]

Post-mortem changes of forensic importance

To the forensic pathologist a number of post-mortem changes are of interest and potential usefulness, mainly in relation to the estimation of the PMI, possible interference with the body, and an indication of the cause of death (Fig. 2.8).

Hypostasis

Post-mortem hypostasis is known under a variety of older names, such as 'lucidity', 'staining' or 'cogitation', but the current title is most suitable as it indicates

Figure 2.2 Blotchy post-mortem hypostasis, forming in the early hours after death. The patchy disposition has no significance and this usually sinks down and becomes confluent in the most dependent areas within a few more hours.

the cause. Hypostasis occurs when the circulation ceases, as arterial propulsion and venous return then fail to keep blood moving through the capillary bed and the associated small afferent and efferent vessels.

Gravity then acts upon the now stagnant blood and pulls it down to the lowest accessible areas. The red cells are most affected, sedimenting through the lax network, but plasma also drifts downwards to a lesser extent, causing an eventual post-mortem 'dependent oedema', which contributes to the skin blistering that is part of early post-mortem decay.

The arrival of erythrocytes in the lower areas is visible through the skin as a bluish red discolouration, 'hypostasis'. It often begins as blotchy patches on both lateral and dependent surfaces, but also on the upper surfaces of the legs, especially thighs. These soon coalesce and slide down to the lowest areas (Fig. 2.2).

The distribution of hypostasis

The pattern of hypostasis depends on the posture of the body after death. It is most common when the deceased body is lying on its back, with the shoulders, buttocks and calves pressed against the supporting surface. This compresses the vascular channels in those areas, so that hypostasis is prevented from forming there, the skin remaining white. When the body lies for a sufficient time on the side or face, the hypostasis will distribute itself accordingly, again with white pressure areas at the zones of support (Figs 2.3, 2.5).

If the body remains vertical after death, as in hanging, hypostasis will be most marked in the feet, legs and to lesser extent in the hands and distal part of the

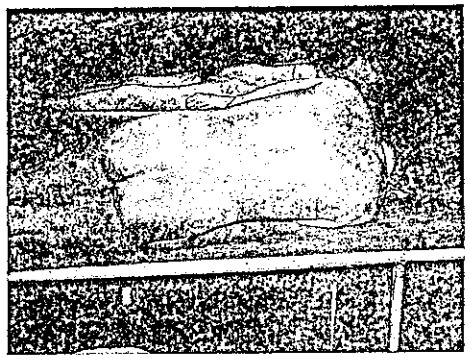


Figure 2.3 Post-mortem hypostasis in the normal distribution. The pale areas are the result of pressure against a hard supporting surface.

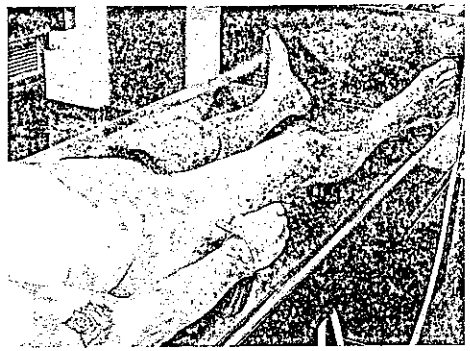


Figure 2.4 Post-mortem hypostasis in a death from hanging. The discolouration of the skin is in the legs and hands, due to the vertical posture after death.

arms (Fig. 2.4). In addition to pallor of the supporting areas, any local pressure can exclude hypostasis and produce a distinct pattern in contrast to the discoloured area. Examples include the irregular linear marks made by folds in rumpled bedlinen, the pattern of fabric from coarse cloth, the pressure of tight belts, brassière straps, pants' elastic and even socks. According to Bonte *et al.*, when electrocution takes place in water (usually a bathtub), the hypostasis is sharply limited to a horizontal line corresponding to the water level.[11]

The colour of hypostasis

The usual hue is a bluish red, but variation is wide. This depends partly on the state of oxygenation at death, those dying in a congested, hypoxic state having a darker tint as a result of reduced haemoglobin in the skin vessels. This is an unsure indicator of the mode of death, however, and no reliance can be placed on a cyanotic darkening of the hypostasis to indicate a hypoxic death in the sense of 'asphyxia'. Many natural deaths from coronary or other disease have markedly dark hypostasis. Often the colour of the hypostasis varies from area to area on the same body. Sometimes a rim of lighter colour may be seen along the margin of the lower darker area and sometimes there is a definite contrast between a bluish zone and a pink margin. This may appear and change as the PMI lengthens. Often the whole area of hypostasis is pink or bright red. When death has been due to hypothermia or exposure to cold in the agonal period, such as from drowning, the colour may assist in confirming the cause of death; again this is relatively non-specific because bodies exposed to cold after death (especially in mortuary refrigeration) may turn pink after an initial stage of normal bluish-red tint.

The mechanism is not understood, but is obviously a result of oxyhaemoglobin forming at the expense of the darker reduced haemoglobin. This is understandable in hypothermia, where the reduced metabolism of the tissues fails to take up oxygen from the circulating blood, but its frequent formation in the post-mortem period is difficult to explain.

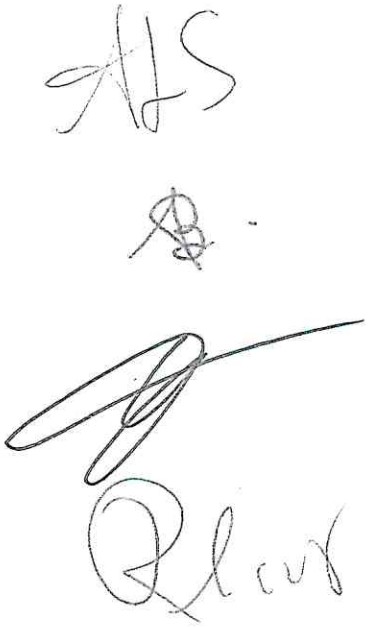
Several researchers have investigated the colour of hypostasis in relation to time since death. Schuller *et al.* noted an increasing paleness between 3 and 15 hours post-mortem, measuring this as a change in wavelength from 575 nm at 3 hours at an average rate of 2 nm per hour.[12] Vanezis has used tristimulus colorimetry to study colour changes and secondary shifting of hypostasis, and claimed that there is a linear relationship between the fading colour and time during the first 2 hours after death, following which changes are unpredictable.[13] Inoue *et al.* have also described measurement of hypostatic colour as a measure of time since death.[14]

It may sometimes be noticed that originally bluish hypostasis becomes pink along the upper part of the horizontal margin, the lower parts remaining dark, so a quantitative change probably occurs, the haemoglobin being more easily re-oxygenated where the erythrocytes are packed less densely in the upper layers of hypostasis.

Other changes in the colour of hypostasis are more useful. The best known is the 'cherry-pink' of carboxyhaemoglobin, which is a unique colour and is often the first indication to the pathologist of carbon monoxide poisoning (see Fig. 29.1). Cyanide poisoning

4. Prova informatica

La ricerca bibliografica



4.

I prelievi per le indagini istologiche: trattamento e conservazione

Il trasporto di salma e di cadavere

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L'autopsia giudiziaria

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5.. Prova informatica

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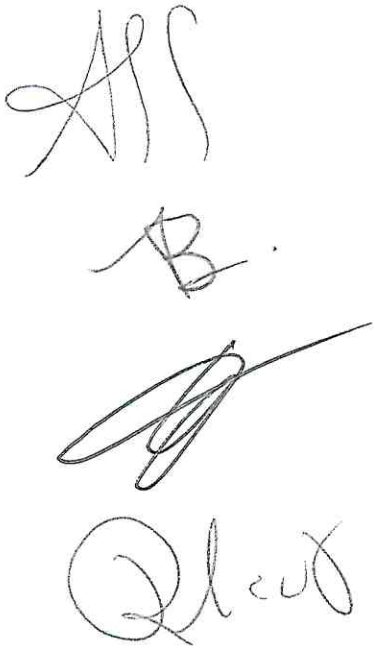
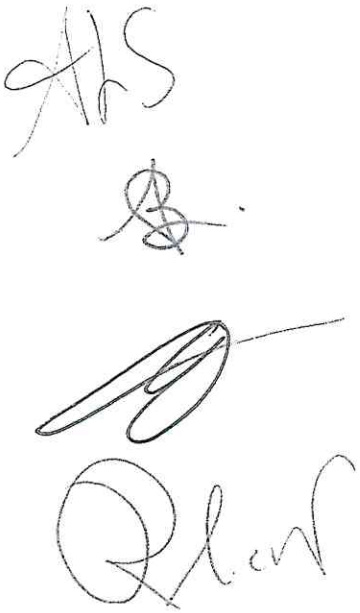


6. Prova informativa

Come si applica excel: la funzione somma



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Le funzioni obitoriali

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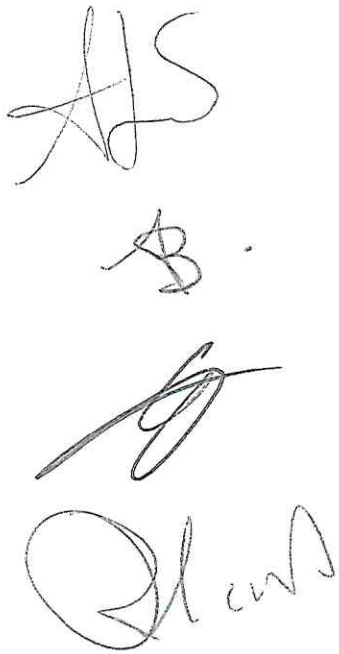
7. Prova informatica

Come creare un file power point



7.

I prelievi per le indagini chimico- tossicologia: trattamento e conservazione

La denuncia sulle cause di morte (scheda ISTAT)

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