

Practical Observations
in
Forensic Medicine

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Practical Observations in Forensic Medicine.

In this dissertation my object is simply to discuss some practical points in Legal Medicine, as illustrated by cases which have come under my notice during a seven years' tenure of the office of Surgeon of Police for the City of Dundee.

One of the most important and difficult duties devolving on one in that position, is the investigation of cases of sudden death, with a view of determining (1) - if the death be a natural one, and (2) - what was the probable cause.

Owing to the secret nature of the enquiry conducted by the Procurators Fiscal in Scotland, and the reluctance of the Crown Officials to sanction post mortem examinations when there are no suspicious circumstances connected with the case, the cause of death cannot in many cases be ascertained with certainty. As a general rule however, when a careful inspection of the body shews no marks of violence, the circumstances connected with the death, along with

with the previous history of the deceased, throw a sufficient light on the case to make a diagnosis possible.

In conducting these enquiries, perhaps the feature which strikes one most forcibly is the frightful mortality of children under the age of one year, and more particularly the large number of such deaths due to suffocation.

During the seven years from 1882 to 1888 inclusive, the number of deaths from this cause (in infants) which were recorded in Dundee amounted to 236, or an average of 33.7 per annum.

Subjoined is a tabulated statement of these, in which I have calculated (1) the relation of such deaths every year to the total population, (2) the relation of these to the total death rate, and (3) their relation to the death rate of children under the age of five.

From this it will be seen, that the relation of these deaths to the total population is a fairly constant quantity, being, on an average for the seven years, one in every 1622 of the inhabitants. Their relation to the total death

death

death rate varied from 7.86 per 1,000 in 1882, to 13.46 per 1,000 in 1884 - the average being 10.79 per 1,000 deaths. The relation they bore to the number of deaths in children under five years of age, varied from 18.41 per 1,000 in 1882, to 32.89 per 1,000 in 1886. The average for the seven years was no less than 28.43 per thousand deaths.

Year	Number of Cases	Proportion to Population	Relation to Total Deaths.	Relation to death rate of Children under five.
1882	24	1 in 6059	7.86 per 1,000.	18.41 per 1,000
1883	33	1 " 4477	9.35 " "	22.98 " "
1884	42	1 " 3579	13.46 " "	31.14 " "
1885	32	1 " 4776	10.36 " "	25.45 " "
1886	35	1 " 4439	12.29 " "	32.89 " "
1887	37	1 " 4157	11.04 " "	24.73 " "
1888	33	1 " 4867	11.16 " "	25.40 " "
Total	236			
Average	33.7	1 in 4622	10.79 per 1,000.	28.43 per 1,000.

In Dundee we have acquired a somewhat unenviable notoriety at the Crown Office for the large number of children who die annually from suffocation, and an examination of the number of similar cases in other large cities will shew that this is not altogether undeserved.

From

From the returns of the Registrar-General for Scotland, I have taken the number of deaths of children under five years of age, registered as due to suffocation in our four largest cities - Glasgow, Edinburgh, Dundee and Aberdeen - from 1882 to 1888 inclusive.-

In Glasgow there were :-

193 cases or an average of 27.57 per annum

In Edinburgh 130 " " " " " 18.57 " "

In Dundee 245 " " " " " 35 " "

In Aberdeen 45 " " " " " 6.23 " "

Now considering the relative size of these cities, we find that if we take the number 100 to represent the population of Glasgow, the following numbers shew very exactly the relative size of the others - viz.

Glasgow : Edinburgh : Dundee : Aberdeen.

100 : 50 : 30 : 20 .

On this basis we find that of deaths from suffocation occurring in children under the age of five years, Dundee shews - relatively - fully four times as many as Glasgow: fully three times as many as Edinburgh, and nearly four times as many as Aberdeen.

Although this difference in the rate of deaths from this particular cause is very marked

marked, we do not find the same discrepancy in the total death rate - from every cause - of children under the age of five years. Thus the average per-centage of these to the total death rate during the seven years under discussion shews:-

Glasgow : Edinburgh : Dundee : Aberdeen
 43.9 : 34.7 : 40.9 : 35.7.

As might be expected Glasgow and Dundee shew a very similar result, while Edinburgh and Aberdeen very closely approximate each other. The two former cities shew a much higher per-centage of deaths of young children than the latter. This of course is to be accounted for by the nature of the population. Glasgow and Dundee are large manufacturing centres with a large proportion of the poorer class - badly fed, poorly clad, and living in miserable one-roomed houses, and amongst this class the infantile mortality is always very high.

I do not think that in Dundee we have really such an abnormally large proportion of deaths from suffocation as my statistics would lead one to infer. I think this may be explicable by the fact that it has always

always been the custom of the Procurator Fiscal here to make a most careful enquiry into every case of sudden death in children, and probably this has been done more systematically and more thoroughly than in most other places.

Of these 236 cases I have personally investigated 181, and it is to them that the following remarks apply.

They occurred as follows:— in 1882 - 19 cases:
 in 1883 - 26 cases: - in 1884 - 24 cases: - 1885
 - 24 cases: - 1886 - 28 cases: - 1887 - 32 cases: - 1888 -
 - 28 cases.

As a rule the following history is obtained
 The child is put to bed in its usual health.
 Some time during the night the mother suckles her infant, when nothing unusual is noticed. She then falls asleep with the child resting on one of her arms, and when she wakes in the morning she finds her infant in this position, dead. The external appearances presented by the body are of a negative character. There are no marks of violence to be observed - post mortem lividity is generally very pronounced on that side of the body on which the child

child has been lying. The face is placid and calm. The lips are more or less livid. The eyes are not congested, and the tongue not protruded. Occasionally some frothy mucus, sometimes tinged with blood - can be seen at the nostrils. The hands are sometimes found tightly clenched.

In those cases in which I have made a post mortem examination, the appearances presented were the usual ones of death from asphyxia - viz: a varying degree of congestion of the internal organs, more especially the lungs and kidneys: more or less engorgement of the cerebral vessels and venae cavae: distension of the right side of the heart with dark coloured and fluid blood, and occasionally small punctiform haemorrhages under the pleura, especially about the base of the lungs.

Those appearances were not always present in the same degree - occasionally one or more of them were absent altogether, and sometimes others, especially the congestion of the lungs - were very pronounced. The only condition present in a marked degree in

in every case I examined was the distension of the right side of the heart by dark fluid blood.

In these cases of suffocation death has been produced in one of three ways:-

- I. From the child's face being pressed against the mother's breast. In this way the respiration is mechanically impeded, and insensibility and death soon ensue.
- II. From the bedclothes being placed over the child's face with a similar result.
- III. From the mother in her sleep turning over on the child, and thus causing death by overlaying.

When we come to enquire into the cause of this great mortality, and the degree of culpability attached to the parents, we are at once met with a difficulty. The physical appearances, both external and internal, give us no help in determining whether the death has been accidental or homicidal. The suffocation of an infant without any external marks of violence is such an easy matter, that a medical examination alone is not sufficient to bring

bring home culpability to the parents. As a proof of this I may state that in no case of this nature which has occurred here during the past seven years, have the Crown Authorities deemed it advisable to order a prosecution.

The small amount of pressure which is sufficient to produce death by suffocation is well illustrated in the two following cases:

In the first case the child was well nourished, of healthy appearance, and four months old. The mother had taken an outing in the Country, and had taken her infant with her. On returning home at night she was driven to within 300 yards of her own door. Before leaving the carriage she put her infant to the breast, and then wrapped a shawl around ^{it} - placing this over the infant's head as the night was somewhat chilly. At that time she saw nothing unusual about the child, but on reaching her own house, she found it dead in her arms. All this time she was perfectly unconscious of anything abnormal going on.

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In the second case, a mature healthy infant, 7 days old, was put to the breast by its mother who was in bed but not asleep. She was talking to some people who were in the room, and not paying much attention to her infant. On withdrawing it from the breast a few minutes afterwards she found it dead.

In both these cases there was no suspicion whatever of foul play, both being purely accidental.

I have tabulated the cases which I have investigated, and a glance at the table below throws a curious light on the cause of this mortality. -

Year.	Total # of Cases.	Illegitimate.	Cases occurring between Saturday and Sunday.	Cases occurring between October and March.
1882	19	7	10	12
1883	26	7	16	14
1884	24	8	12	11
1885	24	9	10	18
1886	28	10	11	22
1887	32	13	12	25
1888	28	10	13	17
Grand Total	181	$\frac{64}{35.3}$ or per cent:	$\frac{87}{47}$ or per cent:	$\frac{117}{65.2}$ or per cent:

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I had early been struck by the frequency with which I was called by the police, on Sunday mornings, to cases of suffocation which had occurred during the night. A glance at the table shews that no fewer than 84 of these 181 cases, occurred between Saturday night and Sunday morning - that is about 47 per cent. Now this is certainly more than a mere coincidence, and as this is the time when so many of the lower classes, among whom these cases are so common, indulge very freely in liquor, we must conclude that the question of drink bears a most important relation to the number of cases which occur at that time.

Although the parents are always unwilling to admit that they were more or less intoxicated at the time they went to bed, the evidence of the neighbours is often sufficiently clear to establish this. In spite of this however, the absence of any marks of violence on the body of the infant, renders it impossible to obtain any evidence of direct

direct culpability. The case generally amounts to no more than a suspicion of culpability, as proof that would convince a jury is almost impossible to get.

It has also been suggested as a probable cause of the frequency of these cases at that particular time, that the parents, exhausted with their week's work, and probably going to bed at a much later hour than usual, sleep more soundly, and thus increase the risk of accidentally suffocating their child.

This may have some slight bearing on the point, but from my experience I have no hesitation in saying that the element of drunk is a much more important one, and plays a prominent part in producing this frightful mortality.

Another important cause however, is undoubtedly overcrowding. In many cases the whole family consisting of Father, Mother, and two, three, or even as many as five children all sleep in one bed - which not unfrequently consists of a bundle of jute sacks which they have got

got from some manufacturer to be sewn. On these, with a very scanty covering, they all huddle together to keep themselves warm, and in this manner the suffocation of an infant - so easily accomplished - is not difficult to explain.

This probably accounts for the fact that 117 - that is 65.2 per cent. of my cases - occurred during the cold weather from October to March.

There is no doubt that this accident - occurs in many cases when the mother sleeps along with the child, without any carelessness on the part of the former, and it is especially liable to occur where the mother is in the habit of going to sleep with the child resting on her arm. The only safeguard against its occurrence is one which, in a great many instances, from want of accommodation, it is impossible to carry out - viz: - placing the child in a separate cot.

The proportion of illegitimate children who have died from suffocation has frequently been commented upon. That 35.3 per cent. of

of the cases investigated by me were cases of illegitimate children - is a striking fact, considering that the birth rate of these unfortunates is about 10 per cent. of the total births. As however, they are almost entirely confined to the lowest class of workers in our factories, who, as well as their children are usually poorly fed and badly clothed, and live in miserable lodgings, this large death rate does not necessarily imply criminal culpability.

A good deal of interest has lately been excited in the question of infantile insurance, and the inducement this offers to many parents to get rid of their children when they are felt to be a burden. The ease with which this can be accomplished is said to be a great temptation to some mothers to rid themselves of their illegitimate offspring, and there is an impression abroad, that many of these unfortunates are sacrificed for the purpose of obtaining the small sums of money for which they have been insured in some society or burial club. There is no

no doubt that within the past few years - several cases have been brought to light in which the paltry sum for which a child had been insured was a sufficiently strong temptation to those concerned to commit the crime of child-murder.

On this ground a Select Committee of the House of Commons has recently reported in favor of several important alterations in the law affecting infantile insurance. It is proposed that a child must not be insured in more than one society, and that the amount for which an insurance can be effected should be reduced. Many people indeed, believing that it is a dangerous and objectionable practice to allow parents to have a money interest in the death of their children, consider that the insurance of infants should be abolished altogether.

In connection with this matter I made enquiries in about one hundred of the cases which I investigated, and altogether failed to see any well founded suspicion that these deaths were in any way connected with burial clubs or insurance societies.

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At present, under the Friendly Societies Act, the amount of insurance money that can be received by the death of a child under five years of age is restricted to £6.

As a general rule, among the poorer classes, in whom death from overlying is most common, only one insurance is effected on the infant's life. The usual premium paid is one penny per week, and from time to time as the family increases the premium is increased so as to include them all. Most offices do not insure children at all till they are a fortnight old, and the policy must be in force for three months before any pecuniary benefit can be obtained from the child's death. The usual amount payable is 30/- after a period of three months: £2 after a period of six months; and so on.

As deaths from overlying - as a general rule - occur in children under the age of nine months, it will be seen that the amount payable at death is at the best an insignificant one.

In about 40 per cent. of the cases I enquired into, there had been no insurance effected

effected on the child's life. In some of these the infant was too young to permit of it.

In other cases again the policy had not been sufficiently long in force to ensure payment on the child's death. In some offices newly born infants can be at once put on their books, but I found as already stated that in a large proportion of the cases, no insurance whatever had been effected.

With regard to illegitimate children, the rule in insurance offices generally is not to accept them till they have attained the age of three years, and in a large number of these cases the cost of interment has had to be defrayed by the Local Authority.

As the result of my enquiries therefore, I was quite unable to see any grounds for suspecting that this high infantile mortality had any criminal connection with insurance or burial clubs, or to detect any circumstances of a more suspicious nature in the case of illegitimate children, than in other similar cases.

Somewhat analogous to cases of suffocation of infants are those of adults, who,

who, when in a condition of deep intoxication are accidentally suffocated by lying on the floor on their faces, in such a way that their respiration is mechanically obstructed by the pressure. In such cases insensibility comes on so quickly - as they are already semi-unconscious from alcohol - that they are quite unable to help themselves. There are generally no marks of bruising about the body. If seen some time after death, the nose and mouth are somewhat flattened from the pressure, and a post mortem examination gives the usual evidence of death from asphyxia. I have seen several cases of this character especially about the time of the New Year festivities, and the following is a type of them.:- I was called by the police to see the body of a woman found dead in her house. She was a fairly well nourished woman about 45 years of age. I found her lying on the floor, face downwards, and her left arm bent across her chest.

There

There was some frothy blood in both nostrils, and some dark fluid blood had trickled out of the mouth on to the floor.

Post mortem examination shewed the right side of the heart and the large thoracic veins filled with dark fluid blood. The left side of the heart was empty and firmly contracted. The lungs, and cerebral membranes were deeply congested. The abdominal organs were normal. There was no obstruction in the mouth, larynx, or trachea.

In some cases of death from asphyxia it is impossible to determine how this condition has been produced, as in the following case of a little girl $2\frac{1}{2}$ years of age.

The story told by the mother was that the child and she slept together on a bed which consisted of some jute packing spread out on the floor. On the morning of the day on which the death took place, the child was in her usual health, and rose to try and light the fire, but she did not succeed in doing this. She thereupon returned

returned to bed, and sometime afterwards the mother rose for the purpose of lighting a fire to prepare some tea. She states that at that time the child appeared to be sound asleep. About ten minutes afterwards she heard a noise as if the child were retching, and on going to her bedside found her either dead or dying.

She stated that she had lost several children suddenly at about the same age - one from an unascertained cause. Post mortem examination showed the child to be well nourished, without any external marks of violence. There was a small quantity of serum in the pericardial sac, and some dark fluid blood in the right side of the heart. The left side was quite empty. There was nothing abnormal in the mouth, larynx, or trachea. The lungs, kidneys, and cerebral vessels were much congested. All other organs were normal.

The appearances in this case pointed undoubtedly to death from asphyxia, but neither the examination, nor the statement of

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of the mother - assuming this to be correct - could throw any light on the means by which the suffocation had been produced. The child was not insured.

In some cases of sudden death, even a post mortem examination does not always shew a satisfactory cause of death. In this respect the following case is worth recording:-

On the 8th of March 1888, I was called to see the body of a man who had died suddenly under the following circumstances:- He was a man about 43 years of age, who had always enjoyed good health. He was of a highly neurotic temperament - easily excited - and when in a passion he frequently complained of palpitation of the heart. On one occasion when in a great rage he fainted. His house consisted of a kitchen and a bedroom which were connected by a short passage. On the night in question, his wife and he had gone to bed in the kitchen about 11 o'clock. He had spent the evening in the house of a friend playing draughts, and

and had not complained of anything unusual. His son - a young lad of 20 - had been in the habit of staying out till late at night, and on this occasion he came home somewhat the worse of liquor about half past eleven, and went at once to the bedroom. His father at once followed him and high words ensued. His mother left her bed and went into the room fearing they might come to blows. No blows however were struck, and in a few minutes the father - who was highly excited with passion - returned to the kitchen, where he was found by his wife, five minutes afterwards, lying over the front of the bed, quite dead.

A careful post mortem examination made twelve hours after death, failed to detect any pathological lesion.

The heart was quite normal - in diastole - and contained a quantity of fluid blood in both cavities. The coronary arteries were normal in every respect. There was nothing abnormal to be seen in the brain, larynx, lungs or any of the other internal organs, and no external marks of violence.

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At first it was considered probable that death had been produced by shock from a blow in the epigastrium, but all the witnesses denied this. The only other explanation I could suggest was that this might be one of those exceedingly rare cases of death from syncope, due to cardiac inhibition, brought about by excessive emotion. The previous history of the man seemed to lend some countenance to this supposition, but the extreme rarity of this condition in cases of a perfectly healthy heart, makes this explanation a somewhat doubtful one.

Was the heart
 tissue explained
 neurologically?

Strangulation and Hanging

These two modes of death are closely allied. In both, the immediate cause of death is asphyxia or apnoea. In the former the pressure of a ligature applied round the neck, or the pressure of the hand on the larynx (throttling), and in the latter, the suspension of the body are the means by which this is produced. Strangulation by the forcible application of a ligature

ligature round the neck is at once presumptive of homicide. Medical Jurists have always agreed that suicide by this means is extremely rare, and except under exceptional circumstances impossible. Any attempt at self-strangulation by simply passing a cord once round the neck, and pulling on both ends, is bound to fail as this pressure on the larynx very quickly produces insensibility, and the constriction cannot be maintained sufficiently long to put an end to life. The hands relax the grip on the cord, the pressure is relieved, and recovery takes place. Some special provision required to be made for sustaining the pressure for some time. This may be accomplished by passing the ligature several times round the neck, making the first turn very tight, so that when insensibility is produced, although the tension on the last turn of the ligature is relaxed, the first turns keep up sufficient pressure to cause death.

Another method is by making what is known as "the improvised tourniquet". by passing

passing a ligature somewhat loosely round the neck, and inserting a stick between this ligature and the neck. By turning the stick round several times a considerable pressure can be produced, and if the stick be caught by the back of the ear or by the clothing and prevented from becoming unwound, death will very quickly ensue.

The following is a very interesting case of suicidal strangulation:-

I was called one day to one of the district police stations to see a man who had been apprehended for drunkenness, and had been placed in a cell by himself. In one corner of the cell was a night-stool, on which was a pretty heavy lid fastened by a hinge. He had gone down on his knees beside this, and taken off a leather belt which he wore, and placed this round his neck - buckling it as tightly as he could. The free end of the belt he had placed under the lid of the night-stool, and kept it there by leaning on this with his

his own. He had then thrown forward his head and in this position he was found dead. This is the only case of suicide by strangulation I have met with.

Accidental cases of this nature are not uncommon and I have seen several cases of this kind. One case was that of a woman 47 years of age, who had been taken home much the worse for drink, and placed on a high-backed chair. She wore a red scarf loosely round her neck. The back of this had got caught on the back of the chair, and her head falling forwards, caused this scarf to press on the larynx so firmly that death from strangulation soon ensued. In another case an old woman of 68, living alone in a garret was found dead, with the back of her cap caught on the knob of the door of a kitchen dresser. She had been seen very drunk on the previous night, and as her neighbours did not hear her moving about, her door was forced and she was found as described. The cap she wore was a worsted one, and was

was tied under the chin. She had evidently fallen against her dresser, and her cap had got caught as described. Being too drunk to disengage herself, the pressure thus produced on the larynx had quickly led to death by strangulation.

Death by this means is therefore strongly presumptive of homicide, and in this connection the case of Queen v. Bury, tried at the Circuit Court in Dundee in March 1889 is of great interest:-

On the night of Sunday 10th February 1889, prisoner called at the Central Police Office, and reported that on the morning of the previous Tuesday, on awakening out of a drunken sleep, he found his wife lying dead on the floor; and round her neck there was a piece of rope with which she had strangled herself. He said that on perceiving this, in a fit of passion he had mutilated the body, by making several cuts into the abdomen, and had then packed the body in a box where it was still to be found. I at once proceeded ^{to} the house and found the body as indicated, jammed

jammed into a wooden box, and covered over
 with books and articles of clothing. It
 was at once removed to the mortuary where I,
 along with Mr Alexander Stalker M. B.
 made a post mortem examination. The body
 was that of a well nourished young woman,
 and she had apparently been dead for
 five or six days, though the only trace
 of decomposition observed was a very slight
 greenish discoloration of the right side of
 the abdomen (the weather at the time had
 been very cold and the body had been
 packed and covered up and lying in a cold
 room.)

There were several small bruises about the
 face and arms, and a well marked ecchymosis,
 about one inch in diameter, into the temporal
 muscle. There was a number of incisions
 into the abdominal wall, most of them
 superficial or only penetrating to the
 muscular layer. One however, commencing
 at the umbilicus, penetrated the abdominal
 cavity for four and a half inches, running
 towards the pubis. Through this opening
 a part of the omentum and about one
 foot

foot of intestine protruded. With the exception of two insignificant cuts, all these wounds showed distinctly everted edges, and were marked throughout by a line of capillary hæmorrhage, showing that they were either ante-mortem, or had been inflicted within a very short time of death - before the skin had lost its warmth and vital elasticity.

Any other signs indicative of ante-mortem hæmorrhage which might have been expected - such as marks of external spurting or the presence of coagula - had been obliterated as the body had evidently been washed.

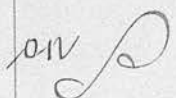
There was a mark of constriction round the neck, passing in front between the hyoid bone and the larynx, and maintaining this level all the way round, with the exception of about two inches on the left side of the neck where it tended slightly upwards.

From the centre of the neck, the first five inches of this mark to the left was ^{ere} hard and parchment like - dry - and brownish red in color. The rest of it was pale in the centre and congested at the edges. It varied in width from one eighth to a third of an inch.

inch.

About an inch and a half from the middle line on the left side of the neck, was a similar mark joining that just described, and running downwards and outwards for three quarters of an inch. When cut into - both marks shewed at various points some extravasation of blood into the skin and cellular tissue. This was specially marked on the right side, where in addition, there was a well marked extravasation into the platysma muscle. There was no rupture of any of the muscles of the neck.

The whole of the face and neck above the constricting mark was congested. There was slight lividity of the lips, but no protrusion of the tongue.

The heart was examined in situ. Both cavities were empty, but there was a considerable quantity of blood in the large veins. Both lungs were deeply congested, and on their anterior surface were several small punctiform haemorrhages immediately beneath the pleura, especially
on 

on the lower lobes.

The mucous membrane of the larynx, trachea and bronchial tubes was congested. There was some bloody mucus in the larynx and trachea, and bloody frothy mucus in the bronchi.

The abdominal organs were normal.

The membranes of the brain were deeply congested, but the organ itself was otherwise normal.

From the examination of the body we were of opinion

I. That death had been caused by asphyxia produced by strangulation.

II That the strangulation was homicidal.

The wounds in the abdomen though brutal and ghastly, had no direct bearing on the cause of death.

A piece of rope was found on the floor of the room in which the body was lying, and on it was tied a slip knot. This rope was just such an one as would have produced the mark of constriction round the neck.

In connection with this case there are several

several points deserving of notice.

I. The empty condition of the heart. This is the only case of death from asphyxia in which I have found both sides of the heart completely empty, though this has been frequently noticed by other observers. It has sometimes been supposed that this condition had been brought about by the examiner opening the head or the abdomen first, and thus allowing the blood in the heart to be drained off. In this case however, the chest was opened first and the heart examined in situ.

II. The small mark - three quarters of an inch in length - which was present on the left side of the neck, had a most important bearing on the case. This indicated the point at which the rope had passed through the slip knot, and where the pressure had been applied. Moreover its direction - downwards and outwards - gave a clue to the direction in which the violence had been applied. From it we were able to say that the rope must have been pulled in a direction downwards, outwards and backwards.

III. 

III. The only injury to the deeper structures of the neck was on the side opposite to this - the right side - where there was a large effusion into the platysma muscle. With this exception the muscles of the neck were in no way injured.

The facts pointing to the homicidal character of the strangulation were :-

I. The extreme improbability of the deceased accomplishing this by means of a rope passed once round the neck and fastened by a slip knot.

II. The marks of bruising on the body indicated a struggle before death.

III. The impossibility of a right handed person - which the victim was proved to have been - applying pressure on the left side of the neck in the direction indicated, for a sufficiently long time to produce death.

The general circumstances connected with the case pointed too to its being one of murder. The woman had been brought to Dundee on false pretences - the prisoner had squandered all her money - and shortly before her death he had borrowed from a neighbour the rope with which the deed had been done.

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The defence set up for the prisoner, and supported by two medical men, was that the strangulation was most probably suicidal, but the medical evidence for the Crown was looked upon by the jury as conclusive, and the prisoner was found guilty and condemned to death.

Before his execution the prisoner admitted his guilt, stating that he had thrown the noose round the woman's neck - that the violence had been applied precisely as we had indicated, and that the mutilation of the body had taken place after the poor woman had ceased to breathe.

As in cases of strangulation the presumption is in favor of homicide, so in cases of hanging it is always in favor of accident or suicide. It is considered almost impossible to murder a person by hanging, except he is greatly debilitated by disease, or unconscious from alcohol or some other poison. There would require to be an enormous disproportion between the physical strength of the assailant and the person assaulted, and in any case there would be distinct evidence of a severe struggle.

The

The post mortem appearances in a case of hanging are precisely similar to those present in death by strangulation. The mark on the neck however is essentially different. In the case of hanging this mark is oblique and interrupted, while in the case of strangulation it is almost quite horizontal and is continuous.

It was at one time supposed that death from hanging could only take place if the body were entirely suspended. Many cases however are on record in which the suspension was only partial - when the person's feet had not been off the ground. I have seen several cases of this kind.

In one case the rope was suspended from a nail in one of the beams of the roof, but the noose was but four feet from the ground, and the deceased - a woman of fifty years of age - was found on her knees.

In another case a man of thirty five was found dead, hanging by a leather belt suspended from the bed post. He was found in the sitting posture.

In a third case a woman of fifty two had

had taken a piece of whip cord - tied the two ends together, and passed this over a gas bracket about four and a half feet from the floor. She had then placed her head through the noose thus formed, and by throwing the upper part of her body forwards, had so constricted the larynx as to cause death. The mark of constriction, which was very deep in front of the neck, passed between the larynx and hyoid bone, and terminated on either side just behind the ear. In this case the feet had not been off the floor.

Another interesting case of hanging occurred at the Royal Asylum here. It was reported to the Procurator Fiscal, that a man twenty nine years of age had committed suicide by strangulation. He had been found dead on the landing of a stair, with a piece of window cord round his neck. He had only been missing for twenty minutes. When found the rope was not attached to any place, and there was apparently nothing from which it could have been suspended except the stair rail, which was about four feet from the

the floor.

I was asked to investigate the case. On examining the body, I found a mark of constriction round the neck, passing in front over the larynx, then obliquely upwards and backwards. On the left side of the neck the obliquity was very considerable. The mark passed upwards to about three quarters of an inch below, and one inch behind the lobe of the left ear, where it terminated, and at this point the skin was unmarked for about an inch. On the right side the mark was deeper than on the left, but the obliquity was less marked. It passed about two inches below the lobe of the ear. The mark was reddish in colour, and one third of an inch in width. The obliquity of the mark and its want of continuity shewed that there must have been some degree of suspension. On examining the cord I found that on one end of it a large number of hard knots had been tied, and these were much flattened as if some considerable pressure had been applied to them. On the landing was a window about

about five feet from the floor, and its lower half was self closing. It was evident that before committing the deed, he had raised the lower half of this window and placed the end of the cord below it. The strain on the cord had then caused it to slip out, and the window had closed, but not before the poor man was dead. As the deceased was 5 ft. 10 ins. in height the suspension could only have been partial.

Stabbing.

In the month of February 1888 I had to investigate two cases of penetrating wounds of the chest inflicted by stabbing, which, though presenting some features in common, differed so materially in their results, as well as in some other important respects, that they are worthy of remark.

The first case was that of a young girl about twenty years of age, who had been stabbed on the back by a long sharp dagger shaped knife. The wound was just above the spine of the left scapula - about
one

one inch in length in a direction downwards and forwards.

The occurrence took place in the vicinity of a medical man's house. She was immediately assisted there and examined by him. He probed the wound and found its track ran upwards and forwards for about an inch, but the probe was there arrested by the supraspinous fossa. The girl was of course very much excited, and in addition to the pain of the stab, she complained of a deep seated pain at the lower part of the left side of the chest. She was able to walk with assistance. There was no cough, haemoptysis or dyspnoea - nothing to indicate a wound of the lung. As the medical man considered it a simple flesh wound, he stitched it up, dressed it, and sent the girl home.

On the following day - about twelve hours after the occurrence - I was asked by the police to visit her with a view of sending her to Hospital if I considered it advisable. When I saw her, she was in bed - her breathing quiet and not laboured - her pulse 80 per minute, of fair quality and regular. She had

had no cough, and only complained of a pain in the left side of the chest. As I was told the wound was superficial, and as the girl did not seem distressed, I did not make a minute examination either of the wound or of the chest, but gave orders to have her removed to the Infirmary, as the house where she lived was a wretched hovel. She was removed in a cab. When she arrived she was washed and put to bed. At that time she was very excited, with a small rapid pulse, somewhat laboured breathing, and was covered with a cold clammy perspiration. She gradually became worse, - in spite of free stimulation - the collapse deepened and she died about two hours after admission. A post mortem examination was made on the following day. On passing the probe into the wound over the left scapula before described, we found it arrested by the supra spinous fossa. At this time the arm was extended along the side of the body. It was only when the arm was flexed on the shoulder, and the scapula thus slightly rotated, that the probe was

was found to pass into the chest cavity over the posterior part of the superior border of the scapula, which was by this means depressed. It was thus evident that when the deceased had been attacked, she must have had her arm in this position - probably to defend herself from a threatened blow. It was this peculiarity which deceived the medical man who first examined the case, and led him to pronounce it a flesh wound of no serious nature. This belief was entertained till within a very short time of death, with the result that no deposition was made by the girl, and a very important piece of evidence was thus lost to the Crown.

On opening the abdomen the diaphragm was seen bulging downwards on the left side.

On cutting into the left side of the chest, a large quantity of air escaped - with a hissing noise. There were five and a half ounces of dark fluid blood in the left pleural cavity. The lung was collapsed and lying towards the back of the chest. The track of the wound was three and a quarter

quarter inches. It entered the chest in the first intercostal space, over the superior border of the scapula, and was found to penetrate the lung (in its collapsed condition) for three quarters of an inch.

With the exception of a severe pain complained of at the lower part of the chest, there were no subjective symptoms at first indicating such a serious wound of the lung. There was no cough, no expectoration of frothy mucus or of blood: no irritation in the larynx: no emphysema into the cellular tissue; and no escape of air or frothy blood from the external wound. (In this case the long track of the wound, and the fact that when the arm was by the side the scapula acted like a complete valve, shutting off the inner from the outer part of the track, prevented these two last symptoms from being present). There was not even dyspnoea till within a short time of death. It is difficult to account for the absence of subjective symptoms in such a serious and severe wound of the lung. The pneumothorax, which was the immediate cause

cause of death must have been present to some extent from the first, and probably caused a partial collapse of the lung.

The fatigue attending her removal to Hospital and the excitement connected therewith, seem to have led to a sudden increase of this, and the fatal collapse which followed.

This case illustrates the extreme importance of giving a guarded prognosis in cases of wounds in the neighbourhood of the chest, especially in medico-legal cases. In this instance it appeared as if the knife had been arrested by the scapula, and the absence of the usual symptoms of a penetrating wound of the chest seemed to warrant a favourable prognosis.

This case contrasts admirably with one which occurred a few weeks later. A man aged 66 was stabbed in the back in two places. I saw him about an hour after the occurrence. He was somewhat excited: pulse 116 strong and of good quality: respiration 24 per minute not laboured but accompanied by a laryngeal rattle. On the posterior aspect of the chest - on the left side - were two

two punctured wounds, each half an inch in length and taking a direction downwards and outwards from the spine. Both were in the sixth intercostal space - one two inches, and the other four and a quarter inches from the angle of the scapula. I at once ordered his removal to the Infirmary. There was sub-cutaneous emphysema over the left side of the chest, both in front and behind, and extending up the left side of the neck. This man had been subject for many years to winter cough, and on this occasion his sputum was frothy, mucopurulent and streaked with blood. From both wounds some florid frothy fluid blood was exuding, and the air was freely drawn in and out of the wounds with the movements of respiration.

Over the right side of the chest, the percussion note was normal, and the respiratory murmur accompanied by low bronchitic râles. On the left side, the emphysematous condition of the chest wall obscured the true percussion note, but the R. M. was decidedly feebler than on the right side, and the accompanying râles obscured by the

the crackling sound of the emphysema.

The emphysema gradually spread over the right side of the chest, down the front of the abdomen into the scrotum, but the man slowly recovered, and was able to leave the Hospital in about a month.

The contrast between these two cases is very marked. Both were serious wounds of the lung. In the latter, the short and direct track of the wound allowed the air freely to enter and leave the chest cavity, while the pleural adhesions, which were undoubtedly present, prevented the occurrence of pneumothorax, and the expired air instead of being shut up in the pleural cavity was forced into the sub-cutaneous tissue.

In the former case, the girl had been strong and healthy - the pleura was non-adherent, while the long track of the wound, and the valve like action of the scapular absolutely shut off any communication with the external air - hence to a large extent the fatal result in the former, and the favourable issue in the latter case.

Another

Another interesting case of stabbing was that of a man who, in a fit of homicidal mania, stabbed his wife with a large ham knife in two places in the back. After the assault she was able to walk to the house of a neighbour, a distance of about 60 yards, calling out that she had been stabbed. The neighbour however, as there was no external bleeding visible, thought she was only suffering from fright, but she gradually sank and died in twenty minutes.

On examining the body after death, I found two punctured wounds - one in the ninth intercostal space on the right side, one inch from the spinal column, one inch and three eighths in length and almost horizontal in direction. It completely divided the tenth rib about a quarter of an inch from its articulation with the spine, and penetrated the lung for three quarters of an inch. There were fourteen ounces of dark fluid blood in the pleural cavity. The other wound was immediately below the twelfth rib, on the same side - an inch and

and a half from the spine, one inch in length and vertical in direction. It entered below the diaphragm, and reached the posterior surface of the right kidney, causing a wound there commencing just below the upper border and running downwards and inwards for two and a half inches, dividing the renal vein but leaving the ureter and artery intact. The centre of the wound was an inch and a half in depth. There were fifty three ounces of blood in the abdominal cavity, and in the fibrous tissue around the kidney was a large quantity of coagulated blood.

As the prisoner was evidently insane - suffering from delusions and hallucinations both of sight and hearing, his counsel successfully tendered a plea of insanity in bar of trial, and prisoner was ordered to be confined during Her Majesty's pleasure.

Accidental, Suicidal,

or

Homicidal Injuries

The question as to whether injuries are accidental

accidental, suicidal, or homicidal in their nature, is one of the utmost importance to medical jurists, as upon this point most medico-legal cases turn. It is one which is sometimes exceedingly difficult to answer.

Indeed, in many cases from a simple examination of the injuries, without an account of the collateral circumstances of the case, it is quite impossible to speak with certainty on this point. In such a case for instance as one in which there is only a single wound or bruise, such as a wound of the scalp or a bruise over one of the bony prominences of the body - as for example the great trochanter - the appearances are quite consistent with what one would expect either from a fall or a blow. In many cases however, especially those of a serious nature, there is generally some feature which gives a more or less certain indication of the manner in which the injuries have been produced. The

main points which tend to elucidate this are :-

I The number of the injuries. (II) Their situation, (III) Their character. (IV)

The

The direction in which the violence has been applied, and (V) The severity and localisation of the injuries.

With regard (1) to the number of the injuries. This often gives an important clue. A man was charged with assaulting his wife with a poker. She had several contused wounds on both sides of the head as well as ecchymoses on both arms and legs. From the number of the injuries it was apparent that the prisoner's statement that they had been caused by her falling out of bed, was untrue. Only one fall was alleged, and while any one of the injuries might have been caused in this manner, it was impossible so to account for them all.

A man was charged with having murdered his little girl by kicking her to death.

He alleged that her injuries were accidental - caused by her falling several times on the floor. I was asked to examine the body. There were marks of blood on the face, arms, and legs, and this had been partially removed by washing. There was some swelling and ecchymosis of both cheeks.

cheeks, nose and lips. The mucous membrane of the gum was torn off for about three quarters of an inch on the right side of the mouth. The two right incisor teeth had been knocked out. The mucous membrane of the upper lip was torn away from the gum for one and seven eighths of an inch from right to left canine teeth, and this laceration extended into the right nostril. There was a large number of bruises all over the body, on the head, trunk, and extremities. In addition to these external injuries there were two ragged lacerated wounds on the posterior aspect of the liver, at the junction of the right and left lobes - one a quarter of an inch deep, extending from the free margin for three quarters of an inch, - and the other - half an inch above this - was of similar depth and half an inch long. There were ten ounces of dark fluid blood in the abdominal cavity.

Here again it was quite evident that the injuries were not of accidental origin, and could not be accounted for as prisoner had

had indicated. He was found guilty of culpable homicide, and sentenced to twenty one years penal servitude.

(II) The situation of the injuries. In some cases the position of a wound in a part of the body not easily accessible, at once negatives the theory of suicide. For instance, the situation of the wounds in the cases of stabbing I have recorded, would at once have disproved the theory of suicide had such a plea been put forward.

Accidental injuries are generally found on prominent and exposed parts of the body.

Suicidal wounds are almost invariably confined to the front of the body. The object of the suicide is to injure some vital part so as to cause death as speedily and with as little suffering as possible.

Sometimes an unusual part of the body is chosen for this purpose. I was called to see an old man of seventy who had attempted to commit suicide by wounding himself in the abdomen. With a somewhat blunt knife he had inflicted three wounds in the abdominal wall, about midway

midway between the umbilicus and the pubis. They were about three inches in length; parallel to each other, and reached down to the muscular layer. Between these and the umbilicus was another transverse wound seven inches in length, the centre of which for two inches penetrated into the abdominal cavity. He died a few hours afterwards, and on post mortem examination, he was found to have a large malignant growth in the rectum. Here, the circumstances of the case clearly shewed the wounds to have been self inflicted, but had this body been found under other circumstances, or had there been any apparent motive for getting rid of the old man, the situation of the wounds might have been looked upon as presumptive of homicide.

(III.) The character of the injuries. - Incised and punctured wounds may be accidental, suicidal, or homicidal. But contused wounds as a rule are not associated with suicide except in the case of lunatics. In cases however in which the injuries are multiple, as for instance where a person throws himself

himself from a great height, there may be a number of contused wounds, but there is generally some other condition which is more immediately responsible for the fatal result.

Hanging as has been mentioned is generally presumptive of suicide, though it is by no means infrequently accidental, as in one case I saw, in which a little girl aged 4 years was amusing herself with a piece of rope which was fastened to a nail on the back of a door. This rope she had placed round her neck, and the support on which she was standing having given way, she was left suspended. When discovered, she was livid and apparently dead, but was restored after considerable trouble by artificial respiration.

Drowning is as a rule suicidal - rarely homicidal, but frequently accidental. In a case of this nature the only guide to a solution of this point is the presence or absence of bruises &c on the body indicative of a struggle before death.

In one case which came under my notice, a suspicion of homicide was entertained. It was that

that of a child of five months, who was found drowned in a pail of slops into which she had fallen head first. The story told by the mother was, that she had left the child on the bed which was removed a few feet from the wall, that at the side of the bed she had this pail of slops, and that in her absence the child must have fallen into the pail and been drowned. A post mortem examination gave the usual appearances of death from drowning, but could not throw any light on the question of accident or suicide. It has sometimes been alleged that cases of drowning in shallow water are most likely to be homicidal, but I have myself seen one or two cases of this nature which were undoubtedly accidental or suicidal. In one case a child had been drowned by falling, face downwards, into a burn in which there were only four or five inches of water; and in another, a man had thrown himself, head first, into a rain water barrel, which contained about four inches of mud, and ten inches of water.

IV. The direction of the violence, and the severity and localisation of the injuries, are often sufficient to clear up the nature of the case.

Cases of cut throat for example are generally suicidal, and in these cases the direction of the wound - from left to right if the deceased had not been left handed or ambidextrous - throws a light upon the case. In one case I examined the injury was so extensive, that it was at first looked upon as a very suspicious one. It was that of a man about 50 years of age, who was found lying dead at the side of a field. He had evidently been dead for four or five days. The wound extended from ear to ear - six and a half inches in length - superficial for the first half inch on the left side, and then very deep all the way round. It passed in front just above the larynx, and the large vessels on both sides of the neck were completely divided. The spine and spinal ligaments were uninjured. A very sharp razor was found at the side of the body. All the

the circumstances pointed to suicide. The man was a penniless tramp who had been drinking heavily, and the razor found was his own.

At the Circuit Court here in 1887, a man was tried for the murder of his wife by striking her on the head with a poker, producing a compound fracture of the skull.

The defence was that the injury had been caused by the deceased falling against a chair or some other article of furniture.

A poker was found in the room and on one end of it was some hair and blood, which however had been accidentally removed before the instrument had been taken possession of.

I was asked to examine the body. On the left temple was a lacerated wound one inch in length, semi-circular in form, with the convexity pointing upwards and forwards.

Beneath the scalp was a large extravasation of blood, with laceration of the anterior and upper part of the temporal muscle.

Half an inch below and a quarter of an inch behind this external wound, was a fracture of the squamous portion of the left

left temporal bone. Here the anterior and upper part of the outer table of the skull was bevelled from above downwards, and the inner table split up for half an inch, and somewhat depressed. The cerebral membranes corresponding to this were torn, and there was a large clot of blood on the surface of the left cerebral hemisphere reaching to its base. There was a lacerated wound of the brain substance about two inches in length, and filled with fluid blood. On the left side of the pons, was a slight laceration of its substance, and there were several small spots of ecchymosis in the pons itself. I gave it as my opinion that the injuries were homicidal for the following reasons. —

- I. A simple fall against a chair would not be sufficient to produce such a severe lesion. If the deceased had fallen from a height with sufficient violence to produce this very severe injury, there must have been some marks of injury on other parts of the body, whereas in this case the lesion was quite localized.
- II. The relative position of the scalp wound and

and the fracture of the skull, as well as the beveling of the outer table of the skull, showed that the violence must have been applied in a direction downwards and backwards, and was precisely what one would expect to find where a blow was delivered by one standing somewhat behind and on the left side of the person assaulted. The size and shape of the wound too closely corresponded to the head of the poker found in the house.

In spite of the general and medical evidence, the counsel for the prisoner so wrought on the feelings of the jury that they returned a verdict of "not proven". A few months afterwards, the accused drowned himself in the river, and before doing so admitted his guilt.

Such then are some of the medical facts which tend to throw some light on the accidental, suicidal, or homicidal character of injuries, but these alone are often insufficient to warrant us in drawing a conclusion. The surroundings of the case must be noted, as for instance the evidences
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of a struggle, as seen by the condition of the furniture of a room or the marks on the ground - the nature of the weapon employed and its position in relation to the body &c. These and other facts are often absolutely necessary, and without a knowledge of them it is sometimes impossible to clear up this all-important point.

There is another class of cases with which medical jurists have to deal, and to which I should like to refer - viz: cases of
Alleged Criminal Assault on Children.

There are no cases in my experience where a medical man requires to be more guarded in expressing an opinion. I have been repeatedly called upon to examine children under such circumstances, where a medical man had told the parents that an undoubted assault had been committed, and in the majority of them, a close investigation into the general evidence, and the medical aspects of the case

case have been sufficient to disprove the charge. I find that the usual course of events is as follows.- The mother discovers that her child is suffering from a vaginal discharge, and thereupon accuses her of having been tampered with. The child of course denies this, but is threatened with punishment if she will not disclose the name of the man who assaulted her. The poor child, for fear of being chastised, concocts a story implicating some one. She is then seen by a medical man who advises the parents to inform the police. An abominable charge is thus brought against a perfectly innocent man, with the most serious results. I have on more than one occasion known of a person so accused, who was perfectly innocent of any crime, mobbed and suffer considerable violence at the hands of a crowd. In one case under such circumstances as I have described, a girl of about six years accused a neighbour of having criminally assaulted her two days before her condition was observed by her mother. She was examined by a medical man

man who told the parents that the child had contracted gonorrhoea. I was asked to examine her, and saw her on the third day after the alleged ^{*} assault. I found her suffering from a copious purulent vaginal discharge, and from swelling and redness of the labia. The hymen was intact. There was no dilatation of the vagina and the perineum was ^{*} uninjured. The child was a very dirty and unhealthy looking girl, and I expressed an opinion that the case was one of ^u vaginitis of non-specific origin. When taken to task, the girl told so many different stories, that it was evident that the whole affair had been concocted. If this case had been brought to trial, and the only medical evidence produced been that of the practitioner who first examined the girl, this unfortunate man might have been convicted and severely punished.

This is only one example of what I have repeatedly seen. The responsibility placed on medical men who are consulted about such cases as these is very great.

In

In another case a man was charged with having assaulted a little girl, ten years of age. I saw her a few hours after the occurrence, and found a recent laceration of the hymen at the left side, some redness and slight swelling of the labia and considerable tenderness on touching them. There was some blood in the vagina. The permaeum was intact, and there was no gaping of the vagina. In this case there was clear evidence of an undoubted assault, and I expressed an opinion that it had probably been committed by the insertion of a finger, and this was afterwards found to have been the case.

These are cases in which a medical man must walk very warily - carefully weigh all the symptoms, and give a very guarded opinion till he is perfectly satisfied. I have no doubt from what I have seen of the careless and indifferent manner in which these cases are frequently examined by medical men, that many persons have suffered severe punishment for

for crimes of this nature of which they were perfectly innocent.

This dissertation, which from the nature of the subject has necessarily been fragmentary and discursive, contains some of the difficulties a medical jurist encounters in forming an opinion which not unfrequently involves the issue of life or death. Seven years experience of this work has served to impress me more than ever with the necessity of bringing to all medico-legal work, an open mind and an unbiassed judgment. The greatest care should be taken to repress any tendency to special pleading, and while, after a careful study of the whole case we should not shrink from expressing our opinion whatever it may be, we should be careful to allow full value to any facts or circumstances which tell in favour of the accused, so that with a clear conscience, we may cheerfully undertake any responsibility which our position entails. —