MORE ABOUT....FORENSICS

DISABILITY GRANTS

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Disability is defined by the World Health Organization (WHO) as a disadvantage for a given individual, assessed non-medically, that limits or prevents activities that are normal for a person in society at a specific age and sex. People with disabilities have physical, intellectual or sensory impairment that permanently limits their daily functioning, assessed medically with support reports from the occupational therapist.

In South Africa, the Social Assistance Act (13 of 2004) states that a person shall be eligible for a social grant when the degree of disability renders him/her incapable of entering the labour market and provided that he/she has not refused to accept employment that is within the scope of his/her capabilities. People excluded from receiving disability grants include those maintained in institutions run by the state, e.g. prison, psychiatric hospitals, state homes for the aged or rehabilitation centres for drug dependence.

Grants-in-aid can be awarded to a carer assisting a person receiving a social grant. An annual amount would be approved to a carer attending full-time to a physically or mentally disabled person. The social grant of a disabled person is converted into a grant for the aged when a woman recipient reaches 60 and a man 65 years. The Act requires that any changes in the general, medical or financial circumstances of a person must be declared to facilitate the review of the grant.[1]

The Act makes provision for social relief of distress, which has unfortunately not been found to be a workable option by one of the authors, even after repeated appeals via social workers.

The definition of a disabled person in terms of the Act is very broad and allows for subjective interpretation by the medical officer. As a result, the system is open to abuse or fraud, both by unscrupulous medical officers, but more importantly by the 'disabled' persons (discussed below).

Disability for work, and not the chronicity of the medical condition, should be used in determining disablement. To assist, occupational therapists can perform a work capacity evaluation, ascertaining the applicant's eligibility for a disability grant on medical grounds, based on functional curtailment, evaluating the level of education, and of physical and cognitive capacity. This report will then state if the applicant has the minimum functional capacities required to work in the open labour market.[2]

Applicants whose condition has the potential for improvement within a period of 6 months following medical treatment or rehabilitation do not qualify for a permanent disability grant, but can be eligible for a social relief of distress grant or a temporary disability grant. As a result of this regulation, some applicants (or potential applicants) might either deliberately not seek medical or other appropriate intervention or, having been admitted into the treatment or other intervention programme, they might deliberately default in order to receive or to continue to receive disability grants. More alarmingly, with the recent roll-out of antiretroviral treatment at government hospitals, there is a real danger of HIV/AIDS patients shunning treatment because they are afraid that if they are treated and their condition improves, they will lose their disability grant.

Anecdotally, an article in *The Daily Dispatch* describes these patients selling their antiretrovirals on the streets of East London.[3] The scenario of patients opting for non-compliance in place of the possible loss of their disability grants is not confined to HIV/AIDS, but could also apply to other chronic diseases, such as tuberculosis or epilepsy.

Psychiatric patients must be on treatment and compliant for at least 6 months before assessment for a disability grant and should also be evaluated by paramedical personnel. Patients with bipolar mood disorder and major depression have to be screened for functional impairment, non-response to treatment, compliance, and frequency of relapses. Substance abuse patients do not qualify for a disability grant unless they have secondary dementia.[4]

The doctor conducting the physical examination of the claimant should obtain a detailed clinical history and carry out a systematic clinical examination and these may have to be repeated to check for consistency. Attention must be given to loss of function, range of movements, and neurological status evaluation, supported by psychological, and other, special investigations, as well as reports from

the social worker and occupational therapist. All medical information in these reports is confidential.

The attitude of private pension funds and insurance companies towards disability is based on the ability of the insured person to carry on functioning in his or her current workplace. Disability insurance excludes medical conditions that existed before the cover began, and companies can reject claims if they believe that the insured person did not fully declare pre-existing medical conditions. With the increasing prevalence of HIV/AIDS, the distinction between disability and impairment has become important. Insurance firms have reviewed this distinction and have established protocols to standardise the evaluation process. They expect companies to counsel employees about claims to help them grasp the consequences of boarding and a disability claim. Many have also started HIV/AIDS care programmes to ensure that infected and affected employees remain functional for as long as possible.

Insurance companies have identified two conditions/diagnoses that are flawed by subjectivity: low back pain and psychiatric problems. The highest number of disability claims in South Africa documented in the 1990s were for musculo-skeletal or low back pain, followed by psychiatric conditions. The latter group of conditions have since increased to become responsible for the highest number of claims today. The doctor treating patients with chronic pain should not be involved in assessing their impairment for the purposes of disability claims.

The main problem with evaluation of patients for disability grants is the inconsistent approach between medical professionals where protocols are not followed and objectivity is lacking. Many professionals have identified the need for guidelines on how to approach patients seeking disability grants in a practical and consistent way. The doctor should also be trained to express his/her professional opinion only on functional impairment resulting from a disease and not simply assume functional impairment because a claimant has the disease. In addition, decisions regarding the irreversibility of impairment should not be made hastily. Treatment should be optimal, with emphasis on compliance and follow-up. Doctors also need to make more use of paramedical personnel, such as physiotherapists, occupational therapists and psychologists, to assist them in assessing claimants of disability grants, because their input in the exercise is invaluable.

References available on request.

CHILD ABUSE: PECULIARITIES OF DIAGNOSIS

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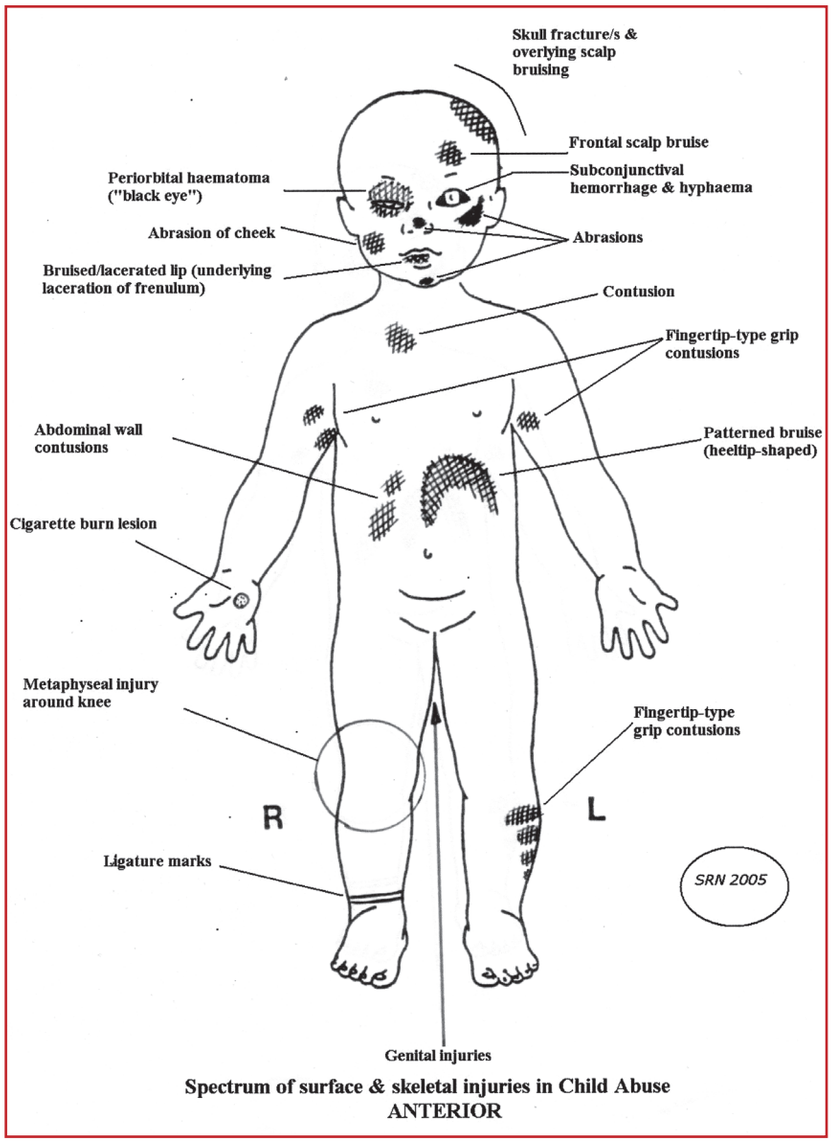
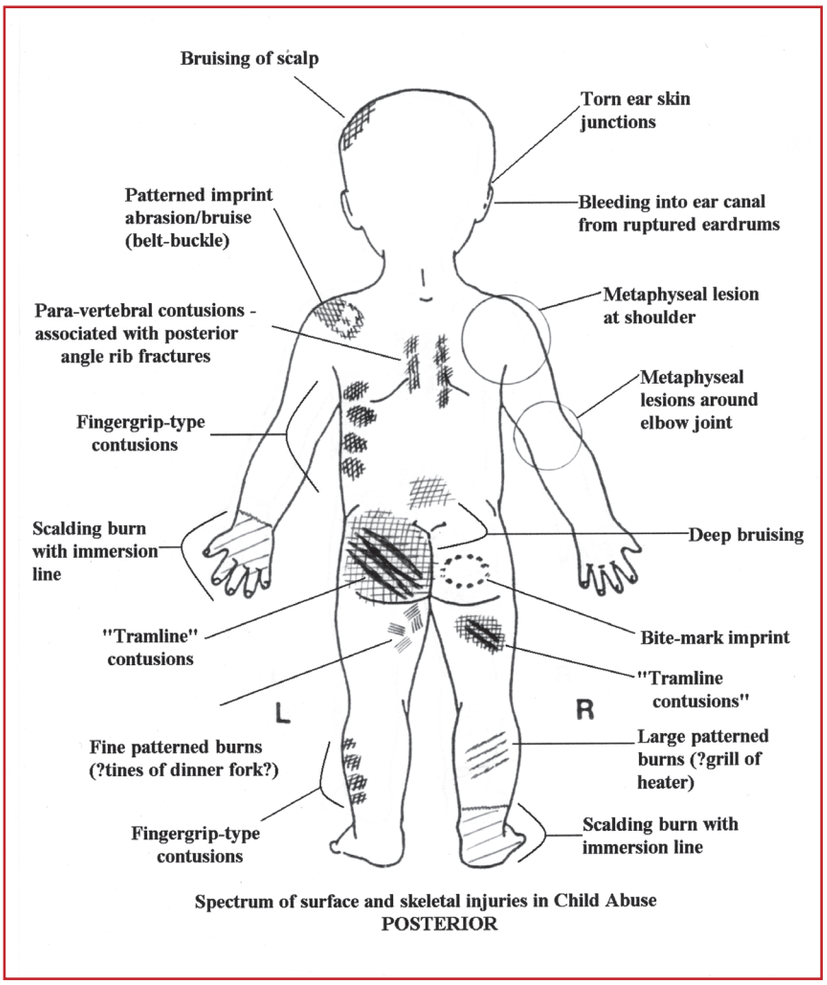
Literature on child abuse is replete with articles on its diagnostic difficulties, but these mainly relate to the infant or toddler (battered baby syndrome). Homicidal deaths of older children follow adult patterns. No single injury



Spectrum of surface & skeletal injuries in Child Abuse
ANTERIOR



Spectrum of surface and skeletal injuries in Child Abuse
POSTERIOR

is diagnostic of abuse. It is the assortment of clinical and radiological findings, together with a contradictory circumstantial history and consistent familial and environmental characteristics, that allow the diagnosis to be considered.

Diversity of injuries

Injuries range from minor to severe. Skin lesions, particularly bruises, abrasions and burns, may reflect the way in which the injury is inflicted (Figs 1 and 2). Wounds of differing ages are especially suspicious. Certain conditions, such as asphyxiation by overlaying, may exhibit no external signs of injury.

Blunt head injury predominates among the severe injuries and is the commonest cause of death. Infants may present with unexplained neurological dysfunction, feeding difficulties, decreased consciousness, listlessness, episodes of apnoea, convulsions and features of raised intracranial pressure. Subdural haemorrhage, brain swelling and diffuse axonal injury are frequent findings, especially in fatal cases, suggesting shearing strains in head trauma. Retinal haemorrhage, when other causes have been eliminated, strongly supports the shaken-infant syndrome. Currently, there is controversy as to whether this can be solely attributed to a whiplash type of craniocervical trauma, or whether head impact is necessary for its occurrence. Infant skulls are soft and flexible, and initially distort inwards with impact. Skull fractures from assault are widespread and complex, involving several bones, and may be depressed; fractures of the base are likely to be intentional. In contrast, accidental skull fractures are usually linear and occur particularly at parietal bones.

Other skeletal injuries tend to involve the joints of the limbs, with classic metaphyseal lesions, but the sternum, long bones and ribs may also exhibit typical lesions. Radiological findings are valuable, and, as with skin lesions, fractures of different ages, defying satisfactory explanation, are especially suspicious. Certain natural bone conditions such as osteogenesis imperfecta, rickets, congenital syphilis or scurvy, and birth trauma, all of which may produce comparable radiological changes, must first be excluded. While not generally fatal, the bony lesions may suggest inflicted trauma in a manner where the child may have been held and thrown against something, or suggest deliberate traction with twisting or torsion of limbs and trunk.

Non-accidental internal chest injuries result in rib fractures, and sometimes cardiac injuries, with associated deep-seated thoracic wall or upper back contusions. Abdominal injuries may cause solid or hollow visceral injury, and lacerations of liver, spleen and mesentery predominate. Retroperitoneal haematoma, and occasional bowel lacerations, usually of duodenum or jejunum at points of fixed structural attachment, may be seen.

Burns, caused by immersion scalding, or by placing a hot object against the body, are found in 10% of all cases. Burns may match the shape and size of the object, and when identified, are characteristic of deliberate injury. Note that impetigo scars may simulate cigarette burns, and severe napkin rash or epidermolysis bullosa may simulate larger burns.

Accidental or intentional?

Toddlers are energetic, and while accidental injuries may be common during play, they are rarely serious or fatal, except in the case of a long fall or car accident. Intentional injury, in contrast, is usually multiple and severe, and often comes with long-term physical impairment. Deliberate injuries

involve head, ribs, retina, abdomen, and lower extremities.

A fall from a height is often difficult to evaluate. Studies suggest that children do survive falls from appreciable heights. Short falls, less than 1.2 metres, are rarely severe, even if these occasionally cause skull fractures. Circumstances behind atypical injuries may prove significant. Delay in seeking medical attention, lack of independent witnesses, occurrence at unusual hours, discordance between injury and explanation proffered, all heighten suspicion of deliberate injury. In these circumstances, the age and stage of the child's developmental milestones must be evaluated.

Carers commonly report that the child was found dead or unresponsive, or fell from a bed or table, or struck his/her head against an object. Tactful probing into family background may reveal a dysfunctional home. Perpetrators are often family associates, caregivers or parents and they may have been disciplining the child.

Evaluation

Sexual abuse is alarmingly frequent and difficult to evaluate, but should be looked for in children of all ages. This requires experience as well as specialised and detailed knowledge of pre-pubertal genital anatomy and anatomical variations, typical findings and even postmortem changes. Physical neglect may be simple to diagnose but it is difficult to identify as abuse in the impoverished, where malnutrition and infectious disease prevail. When diagnosis is difficult, refer for expert opinion.

Legal duty

Health care providers are required by law under the Child Care Act of 1983 (Section 42 (1)) and the Prevention of Family Violence Act of 1993 (Section 4) to report child abuse. This duty is borne by doctors, dentists, nurses and social workers, and also now by teachers or any person employed by or who is managing a children's home, place of care or shelter.

FURTHER READING

1. Byard RW. *Sudden Death in Infancy, Childhood and Adolescence*, 2nd ed. Cambridge: Cambridge University Press, 2004.
2. Knight B. *Forensic Pathology*, 3rd ed. London: Arnold Press, 2004.

DRUNKEN DRIVING: FREQUENTLY ASKED QUESTIONS

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Alcohol intoxication continues to contribute to road carnage in South Africa, despite the introduction of breathalyser testing and reduction in the legally allowed level of alcohol for a driver. Common questions relating to medical aspects are discussed below.

1. What is the relationship between the main and alternative charges related to drunken driving in our traffic legislation?

The main charge (section 65 of the National Road Traffic Act, Act 93 of 1996, subsection (1)) states that 'no person shall on a public road drive a vehicle; or occupy the driver's seat of a motor vehicle the engine of which is running, while under the influence of intoxicating liquor or a drug having a narcotic effect'.

The alternative charge, in section 65, subsection (2), states that 'no person shall on a public road drive a vehicle; or occupy the driver's seat of a motor vehicle the engine of which is running, while the concentration of alcohol in any specimen of blood taken from any part of his or her body is not less than 0.05 gram per 100 millilitres, or in the case of a professional driver referred to in section 32, not less than 0.02 gram per 100 millilitres'. Section 65 subsection (5) further provides for a legally acceptable breath alcohol level of 0.24 milligrams per 1 000 millilitres in the ordinary driver and 0.10 milligrams per 1 000 millilitres in the professional driver.

The alternative charge is usually introduced where the medical findings are inconclusive, and where samples are taken at roadblocks or by nurses and no medical examination is conducted.

2. How acceptable is the breathalyser result as evidence?

Breathalyser evidence has been accepted in South Africa since 1996. Stringent criteria are applied to any scientific or technical device, to pass scrutiny in court as to reliability, sensitivity, validity, and SABS approval.

3. What is the rationale behind the prescribed 2-hour interval for sample collection?

Specified for the alternative charge only, a presumption is made by the court (s65 subsections 3 and 6 of the National Road Traffic Act) that, with respect to a specimen taken within 2 hours of the offence, the test result is accepted as the alcohol level at the time of the offence. The onus is on the accused to prove otherwise.

This was provided for in order to facilitate successful prosecution of offenders, as blood is frequently only drawn some time after the arrest, and it is almost impossible to prove the precise blood level at the time of the offence.

It is easier to convict if the sampling is done within this prescribed time. However, a delay beyond 2 hours should not be a reason for failure to conduct a medical examination.

4. Is the consent and cooperation of the driver required?

An arrested person is subject to the provisions of the Criminal Procedure Act, Act 51 of 1977, which empowers a doctor, at the request of the police, to conduct a medical examination and obtain a blood sample. A registered nurse may also obtain a blood sample. Consent of the driver is strictly not required, but it is advisable to obtain his/her cooperation.

5. What if a driver refuses to have blood taken?

The National Road Traffic Act section 65 (9) states 'No person shall refuse that a specimen of blood, or a specimen of breath, be taken of him or her'. Refusal is thus an offence, and he/she may be charged with failing to provide a sample. Implications of refusal should be explained clearly to the driver.

6. May the accused call his/her own doctor, or lawyer, to attend the examination?

An arrested individual is entitled to have his legal representative present, at his own cost, but this must not unreasonably delay the examination. This could also apply to his medical practitioner.

7. What are the precautions that need to be taken when blood sampling?

Ensure that the receptacle is new and unused. The rubber bung of the test tube should be wiped with a non-alcoholic cleansing agent and tapped to dislodge powder stuck to it. The skin should be cleansed with a non-alcoholic cleansing agent, e.g. soap and water, 'Phisohex', or acetone. The tube should be gently inverted at least 10 times to adequately mix the blood with preservative. Identifier information must be correctly inscribed on the label.

8. What are the common defence challenges to the charge of drunken driving?

These include drinking after the offence (the 'Hip Flask' defence), spiked drinks, trauma/shock, use of skin antiseptics containing alcohol, mix-up of specimens, post-sampling formation of alcohol, drug alcohol reactions, e.g. tranquillisers, hypnotics, anti-psychotic and anti-epileptic drugs, medicines containing alcohol, and fluid infusions during emergency treatment.

9. What are the common differential diagnoses to consider in the examination of a person allegedly under the influence of alcohol?

These include metabolic causes such as hypoglycaemia, hyperglycaemia, and uraemia; neurological conditions such as head injury (concussion), a stroke, coma; or narcotic drugs, exhaustion and sleep deprivation.

10. How much may a person drink and still be able to drive safely?

It is often wrongly assumed that a blood or breath alcohol concentration within the legal limits for driving equates with the capacity to drive safely. There is no real basis for this assumption. Alcohol consumption may impair the faculties of persons even at low blood levels (below the legal limit!) particularly in susceptible individuals. A driver may be charged with driving under the influence of alcohol on the basis of the clinical findings of impairment of faculties alone, without the evidence of an alcohol level in blood or breath. No amount of consumption may be regarded as completely safe.

Further reading available on request.

SINGLE SUTURE

BEWARE FAT BOTTOMS!

The rising levels of obesity may be having effects not previously thought of. It appears that fat bottoms are stopping injectable medication from reaching its target. Victoria Chan and her team at the Adelaide and Meath Hospital in Dublin injected air bubbles in the bottoms of 25 men and 25 women, using a standard needle. Subsequent CT scans showed that these air bubbles landed up in fat rather than in the underlying muscle in 23 of the women and in 11 of the men. This suggests that doctors should be using longer needles for obese patients.

New Scientist, 3 December 2005: 5.