

Assessing Neuropsychological Implications of Trauma

Karen Addy^{1*}, Annette Farrant², Kate Humphreys³, Michelle Potts⁴

¹Consultant Clinical Neuropsychologist, Cheltenham and Liverpool.

²Consultant Clinical Neuropsychologist, Cheltenham and Bristol.

³Consultant Clinical Neuropsychologist, Cheltenham and London.

⁴Chartered Clinical Psychologist, Cheltenham and Milton Keynes.

Corresponding Author: Karen Addy, Hugh Koch Associates, Festival House, Jessop Avenue, Cheltenham, **Tel:** 01242 263 715;

Email: kareninwales@btopenworld.com

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ABSTRACT

Whilst accidents can often be a traumatic and emotional experience for many, the cognitive symptoms suffered after accidents can be as equally traumatic. The following paper explores how, in the context of a mild head injury, stress and anxiety relating to perceived cognitive impairments and the meaning of these can in themselves become a traumatic experience thus maintaining the cognitive and functional difficulties.

KEYWORDS

Neuropsychological Biopsychosocial Assessment; Anxiety; Depression; Trauma.

CASE SERIES

Broadly defined, neuropsychology can be viewed as the study of brain and behaviour relationships, within expert witness practice clinical neuropsychologists apply neuropsychological assessment and methodology to answer questions regarding a specific legal matter with the primary duty being to the court. Within the legal context, neuropsychologists can be requested to provide a wealth of information regarding violence risks, decision-making, capacity, fitness to stand and fitness to plead. Within civil proceedings neuropsychologists are employed to provide an opinion regarding diagnosis, prognosis, duration, causality and functional impact of brain injuries. More recently in the USA there has been increasing use of neuropsychologists in the understanding of sports related concussion injuries following the recognition of chronic traumatic encephalopathy in American Football Players [1] something that has yet to come to prominence in the UK for example in rugby or football. It is recognised that whilst the underpinning principles of neuropsychological practice are the same in legal and clinical contexts, it is argued that the expert witness neuropsychologist requires a comprehensive

understanding of the legal process and their role within it [2, 3]. In addition, expert neuropsychological opinion is driven by an unbiased evidence-based review of relevant information as opposed to clinical data alone. The current paper highlights the role of the expert neuropsychologist and how neuropsychological assessment can aid the differentiation of trauma-based cognitive symptoms versus neurological based cognitive impairment.

BACKGROUND TO CASE STUDY

Ms J was 45 years old at the time of the assessment and worked in a demanding role in education. She suffered psychological distress as a result of a fall on a wet surface at work. It was advised that she landed heavily on her back hitting her head and causing an injury to her coccyx. It was reported that that she was initially dazed and confused and had severe pain in her coccyx. She was taken to hospital. Self report and medical notes were unclear as to if she lost consciousness at the scene. However, Ms J reported having impaired recall of how long she was on the floor. In addition her memory of events

immediately after the accident was unclear with partial recollection of being in the ambulance. The account was suggestive of a mild head injury with possible concussion as identified by possible brief loss of consciousness at the scene, no evidence of significant posttraumatic amnesia or retrograde amnesia and Glasgow Coma Scale scores of 15/15 (as noted in the hospital notes). MRI scanning was also reported as normal and assessment from a consultant neurologist suggested no underlying neurological impairments.

Ms J was referred for neuropsychological assessment 12 months after the index accident reporting on-going cognitive symptoms of poor concentration, poor memory, word finding problems and problems with over stimulation from noise and lights which led her to suffer panic attacks and avoidance of social situations. Ms J described struggling at work (she had returned full time 4 weeks after the accident) as she could not concentrate, worrying about her memory and being anxious that she may fall again. She also reported being fatigued, however she was not sleeping well due to anxious thoughts and worries in relation to her ability to work.

NEUROPSYCHOLOGICAL ASSESSMENT

When considering the approach to a neuropsychological assessment a number of biopsychosocial issues are considered, in order to test out clinical hypotheses relating to the underlying causes of the reported cognitive and functional impairments:

Biological - in considering if symptoms reported are neurologically based (i.e. in response to brain damage) a number of indicators are explored including loss of consciousness at the scene, evidence of confusion and amnesia, Glasgow coma scale scores identified in the ambulance and hospital records, brain scan information and opinion of relevant medical experts (neurologist, radiologist, neurosurgeon). In each case the severity of the injury sustained would inform the likely biological basis of on-going symptoms at the point of assessment.

Psychological - in considering the contribution of psychological symptoms a number of wider issues are also taken into account including the trauma of the event itself, the trauma of the medical treatment needed after admission to hospital (e.g. intensive care), the trauma and adjustment to the cognitive symptoms and the interaction of these factors to the claimant's overall presentation.

Social - in considering the social impact of cognitive impairment this involves consideration of the person's lifestyle, work life demands, personal goals, family goals and beliefs and social demands and pressures such as childcare, mortgage commitments that can add pressure on the person to recover.

In this case Ms J's actual head injury were classified as Mild

/ Concussion as there was minimal (if any) loss of consciousness, minimal confusion at the scene and no evidence of any structural injury on MRI brain scanning. However, she presented with significant social stresses reporting a highly demanding and stressful job and a large mortgage that prevented her from reducing her work demands. In addition she appeared very tearful and lacking in confidence in her own abilities since the index accident with psychological symptoms consistent with anxiety and depression.

In order to explore the possible causes of her on-going symptoms a neuropsychological assessment and psychological assessment was completed. Neuropsychological assessment involves a process of using standardised tests to examine individuals' cognitive abilities. Clinically relevant information regarding an individual's mental state and cognitive ability is also obtained through careful observation of their approach to the assessment tasks [4-6]. In Ms J's case she was highly anxious and she tended to under estimate how well she was performing in the neuropsychological assessment and this caused her to become tearful and distressed. She tended to have very high expectations of herself and appeared anxious when unable to achieve these expectations without recognising her strengths in the assessment. Ms J's performance on the actual neuropsychological assessments tasks placed her abilities within the above average range and in the level expected given her occupation and educational history demonstrating no actual decline in her ability. This would be consistent with the biology of her actual injury. However, it was evident that her psychological state of depression and anxiety related to her perceived cognitive impairment was causing her functional problems.

Her symptoms were consistent with an Adjustment Disorder (DSM-V 309.28) [7] with mixed anxiety and mood disturbance, which was being maintained by reduced confidence. This created a vicious cycle of low confidence, reduced ability and increased anxiety, which was further contributing to her fatigue and wider neurological symptoms. It was recommended that she be offered cognitive therapy with a neuropsychologist to assist with the management of fatigue, management of her perceived cognitive impairments and to address her anxiety and low mood symptoms [8-11].

DISCUSSION AND CONCLUSION

This case study provides a clinical example of how a minor head injury can lead to functional disability, stress and anxiety, if not fully assessed and treated correctly. Whilst accidents can by their nature be traumatic and cause trauma-related symptoms it is important to highlight that the symptoms experienced following an accident can be as equally traumatic

and anxiety provoking. This is especially the case in neuropsychology, whereby the experience of suffering a perceived loss of cognitive ability can become self-fulfilling by generating anxiety, low mood and sleep impairment which then in turn lead to further loss of cognitive function [12]. In such a case where there has been a head injury and the person reports cognitive decline, a full and thorough biopsychosocial neuropsychological assessment can be invaluable in determining cause, effect and prognosis.

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