



# A case study from a nursing and occupational therapy perspective – Providing care for a patient with a traumatic brachial plexus injury

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## KEYWORDS

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Case study;  
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**Abstract** This paper presents a case study that demonstrates how collaborative working between professionals enhanced the holistic care for a patient following a traumatic brachial plexus injury. The paper will describe the patient's journey of care from initial presentation, diagnosis and assessment, acute care provision, discharge & rehabilitation to ongoing supportive counselling. The care encompasses input from both a nursing and occupational therapy perspective.

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## Editor comments

This case study not only provides an excellent insight into the complexity of care provided for patients with traumatic brachial plexus injury but offers both a nursing and therapy perspective. The paper demonstrates just the kind of case study that the editorial team for this journal would like to encourage. It focuses clearly on patient centred, practice issues whilst at the same time considering some of the underpinning literature and evidence base.

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## Introduction

This case study explores the partnership between the Clinical Nurse Specialist (CNS) and Occupational

Therapist (OT) and how this combined professional approach enhanced the provision of care to a patient following a traumatic brachial plexus injury. The patient had complex injuries and subsequently required complex healthcare interventions from both a nursing and occupational therapy perspective. The paper will introduce the patient, whose name has been changed to protect confidentiality, and will take the reader through the pathway of care that was experienced by the patient over a two year period.

## Anatomy of the brachial plexus & mechanisms of injury

The brachial plexus is a network of nerves that originate from the spinal cord and control muscles, movement and sensation in the shoulder, arm and hand. The plexus is formed by 5 nerve roots which exit the spinal column in the neck with four named after the lower cervical vertebrae C5–C8 and the fifth root from the first thoracic vertebrae (T1). The roots join to form three trunks: the upper C5 and C6, middle C7 and lower C8 and T1 trunk. Each trunk then divides into an anterior and posterior division. The divisions then join to form three cords: lateral, posterior and medial before finally splitting to form the

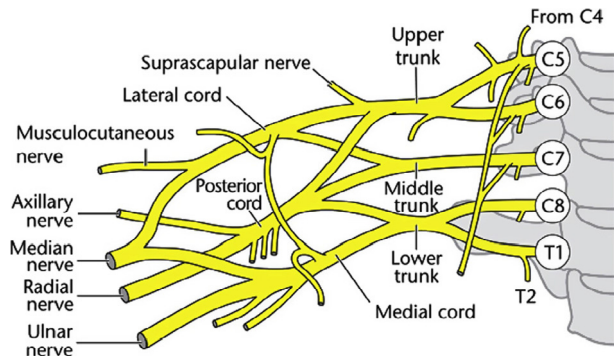


Fig. 1 Diagram of brachial plexus anatomy.

major nerves of the arm. The nerves are the musculocutaneous, axillary, median, ulnar and radial nerves (see Fig. 1).

Adult traumatic brachial plexus injuries are potentially devastating, debilitating injuries resulting from a variety of causes including high speed motor vehicle accidents (Choi et al., 1997; Estrella, 2011) as this patient case study shows. The variety of presenting mechanisms of injury are recorded by the Scottish National Brachial Plexus Injury Service (SNBPIS) (see Table 1).

## Initial presentation, diagnosis and assessment

### The first 2 weeks following injury

Pamela was a 53 year old right handed lady, married with 2 daughters and had previously worked as a medical secretary. She was involved in a road traffic collision in early 2010. She was a belted rear seat passenger, behind the driver, when the car swerved in the dark to avoid an obstacle on the motorway. Subsequently the driver lost control of the vehicle and it came to a halt in a ditch.

Following examination and investigation in the Emergency Department, Pamela was found to have sustained a number of injuries:

- forehead laceration
- fractured right clavicle
- fractures of right ribs 1–3
- fractured transverse process of C7
- a raised hemi diaphragm noted on chest X-ray (which raised a high suspicion of a phrenic nerve palsy and was suggestive of a preganglionic injury) (McRae, 2010).

Pamela had pulses present in her right arm but no muscle activity in the upper limb except for some

Table 1 Mechanisms of injury recorded by SNBPIS ([www.brachialplexus.scot.nhs.uk](http://www.brachialplexus.scot.nhs.uk)).

Mechanism of injury	Number 2005–6	Number 2006–7	Number 2007–8	Number 2008–9	Number 2009–10	Number 2010–11	Number 2011–12	Number 2012–13
Motorbike RTA	14	6	11	16	9	7	8	10
Pedestrian/Bicycle RTA	0	2	2	2	6	4	1	1
Car RTA	8	6	8	8	5	6	4	2
Industrial accident	1	1	4	3	2	1	5	7
Falls	8	14	17	18	20	24	20	22
Assaults/lacerations	1	1	1	5	2	4	4	5
Sporting accidents	3	8	8	2	2	1	6	3
Iatrogenic								2
Other		5	8	3	7	5	7	4

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