

## What is happening to patients who have had polio? The role of the patient in assessment and management

Volume 45, No.7, July 2016 (<http://www.racgp.org.au/afp/2016/july/>) Pages 529-530

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Patients who have had polio in the past can present as a challenge to clinical assessment. The majority of these patients are older than 60 years of age and may report a range of symptoms that relate to impairment progression in the form of post-polio syndrome but could also be secondary health conditions, age-related concerns or an unrelated health matter. Factors involved in the management of patients who have had polio include careful diagnosis, recognition of adaptive strategies and enhancement of the patient's self-care skills.

### Background

Polio, family Picornaviridae, genus *Enterovirus*, menaced Australia from 1887 until the introduction of the Salk vaccine in 1956.<sup>1</sup> Respiratory involvement is fatal in 5–10% of patients, and 1 in 200 patients develop long-term asymmetric paralysis.<sup>2</sup> Transmission of polio still occurs in Pakistan, Afghanistan and war-disrupted regions. Up to 8.32% of Australian children are not fully immunised at 12 months of age, and 7.66% are not fully immunised by the age of 60 months.<sup>3</sup> The threat to Australia's herd immunity remains.

### Post-polio syndrome

Post-polio syndrome should not be diagnosed until all other possibilities have been excluded (Box 1).

Post-polio syndrome is an example of impairment progression that leads to a reduction in the physical abilities of people with impairments over a long time. It presents with a slow progression of symptoms that can include:<sup>2</sup>

- incremental decline in muscular function
- less endurance of effort
- cold intolerance
- breathing difficulties
- dysphagia
- pain
- severe fatigue.

#### Box 1. Case study

AM, 70 years of age, has quadriplegia following polio, and has been in a wheelchair since the initial illness. AM graduated from university and worked in a professional position, retiring after 27 years because of increased fatigue and a growing awareness of slow loss of strength. AM consulted her polio-experienced rehabilitation doctor, now deceased, who advised her about management of possible post-polio syndrome. In 2014, AM reported to her local doctor that she had woken to find a dramatic loss of movement in her right arm. Not satisfied with her local doctor's opinion that this was post-polio syndrome, she asked for a referral to a neurologist. While waiting for an appointment, AM was referred for a computed tomography (CT) scan that did not reveal any abnormalities. Her right arm recovered 60% of its function over six months. The neurologist diagnosed a lacunar infarct.

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The aetiology is not yet understood.

Often, patients who have had polio have been functionally stable for decades and the negative changes are unexpected. Post-polio syndrome is estimated to occur in more than 50% of patients who have had polio, and has been consistently reported across various cultures.<sup>4</sup> There is little evidence of effective treatment.<sup>4</sup>

Patients may not be aware of post-polio syndrome or secondary health conditions, particularly if they apparently recovered fully from their initial illness episode. The clinician should diagnose any unrelated, secondary or age-related conditions, and treat or refer such matters for ongoing care. Subtle respiratory impairment may occur even without a history of mechanical ventilation. It is essential to assess respiratory function for sleep apnoea as this may cause daytime sleepiness and fatigue,<sup>5</sup> and also when considering anaesthesia.<sup>6</sup>

## Life-course stages, impairment cycles and self-management skills

The physician will come to recognise that a person living with residual impairment from polio is determined to maintain a very active lifestyle, as independent as possible, albeit at some physical and emotional cost. During their lifetimes, many who were obviously disabled by paralysis due to polio were challenged by stigma during life-course stages and impairment cycles.<sup>7</sup>

Adaptive competence developed as individuals made critical decisions about managing their disabilities within a problematic social context. It is no surprise that patients who have had polio value independence and self-management. Like their international counterparts,<sup>8</sup> many Australians living with polio maintain leading roles in organisations involved with equal opportunity and social inclusion.

Patients who have had polio have outlived many of their rehabilitation physicians and therapists. They have had to develop ways of using their remaining strengths to continue in the community. Once they were aware of the unexpected deterioration in their physical abilities, some Australians who have had polio collected the few available scientific reports and developed self-management information for sharing within state-based networks, which now link to Polio Australia and other international bodies. Useful manuals of health promotion have been produced to enable people who have had polio to recognise when they need medical and health professional assistance ([www.polioaustralia.org.au/wp-content/uploads/2010/09/The-Late-Effects-of-Polio-Introduction-Module-Online-Version.pdf](http://www.polioaustralia.org.au/wp-content/uploads/2010/09/The-Late-Effects-of-Polio-Introduction-Module-Online-Version.pdf) (<http://www.polioaustralia.org.au/wp-content/uploads/2010/09/The-Late-Effects-of-Polio-Introduction-Module-Online-Version.pdf>)).

Some patients who have had polio have negative memories of their rehabilitation service providers and will be resistant to advice if it is perceived as threatening self-control, and need to be actively involved in their own management.<sup>9</sup> The physician can help by thoughtful development of care plans that draw on the knowledge and determination of patients who have had polio, tempered by the assistance of allied health professionals with relevant neurological expertise and sensitivity to psychosocial factors. Self-management has been shown to reduce hospitalisation, improve healthcare behaviours and positively influence the doctor–patient relationship.<sup>10</sup>

In summary, the person who has post-polio syndrome, or who may be developing it, and who may also be ageing, needs highly skilled advice to survive and maintain their social roles and wellbeing into old age.

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**Competing interests: None.**

**Provenance and peer review: Not commissioned, externally peer reviewed.**

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