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The essential role of rehabilitation in operative and non-operative shoulder management: A 40-year experience (1985–2025)

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Abstract – *Introduction*: As early as 1985, Charles S. Neer II and Peter Welsh emphasized that successful shoulder treatment – whether surgical or non-surgical – relies on structured rehabilitation based on simple exercises performed independently by the patient several times daily. The Sarah Jackins auto-rehabilitation program, developed with Frederick A. Matsen and Douglas T. Harryman in Seattle, further reinforced this concept and was widely implemented in clinical practice and training. *Methods*: This paper describes the application of four key rehabilitation principles in more than 24,000 patients treated for shoulder conditions, including over 8,000 surgical cases. *Results and Discussion*: The protocol is based on (1) simple self-administered exercises performed three to five times daily, (2) supervision by a trained physiotherapist. The paper is well illustrated with examples of all the exercises performed. *Type of paper*: Descriptive, Level V of evidence, Expert Opinion.

Key words: Shoulder, Rehabilitation, Surgery, Functional recovery.

Introduction

In the 1980s, surgical treatment for subacromial impingement, rotator cuff tears, and shoulder arthroplasty remained relatively uncommon in France and across Europe.

The Lyon school, led by Professor Albert Trillat, supported and encouraged one of the authors (DFG) to undertake fellowships with Peter Welsh in Toronto and Charles S. Neer II in New York [1]. In the 1990s, a similar opportunity was offered to MMS, who trained with Frederick A. Matsen, Douglas T. Harryman, and Kevin Smith at the University of Washington in Seattle.

During these experiences, we were struck by the excellent functional outcomes observed in operated patients. At that time, surgery was performed exclusively using open techniques, with arthroscopy emerging in the 1990s. Patients were typically pain-free, demonstrated full range of motion, and returned to professional and sporting activities with a high level of satisfaction.

These reproducible results appeared to depend on two key factors. First, careful and tissue-preserving surgical techniques, using minimally invasive approaches, allowed for reduced postoperative pain and non-restrictive immobilization. Second, and more importantly, the implementation of a structured pre- and postoperative rehabilitation protocol based on simple exercises taught to the patient before surgery and performed independently several times per day.

Postoperative rehabilitation included early passive mobilization, followed by assisted active motion and progressive strengthening, enabling rapid and reproducible functional recovery. Upon returning to France, we adopted and adapted this rehabilitation protocol, incorporating systematic supervision and monitoring by physiotherapists specifically trained in shoulder rehabilitation. This protocol has since been consistently applied in our clinical practice and is presented in this study [1, 2].

Methods

Rehabilitation protocol: principles

Largely inspired by the Neer protocol, our rehabilitation approach is applied to both operated and non-operated patients. It is indicated for painful and stiff shoulders, irreparable rotator cuff tears, and postoperative management. Preoperative rehabilitation plays a critical role in facilitating postoperative recovery [3].

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