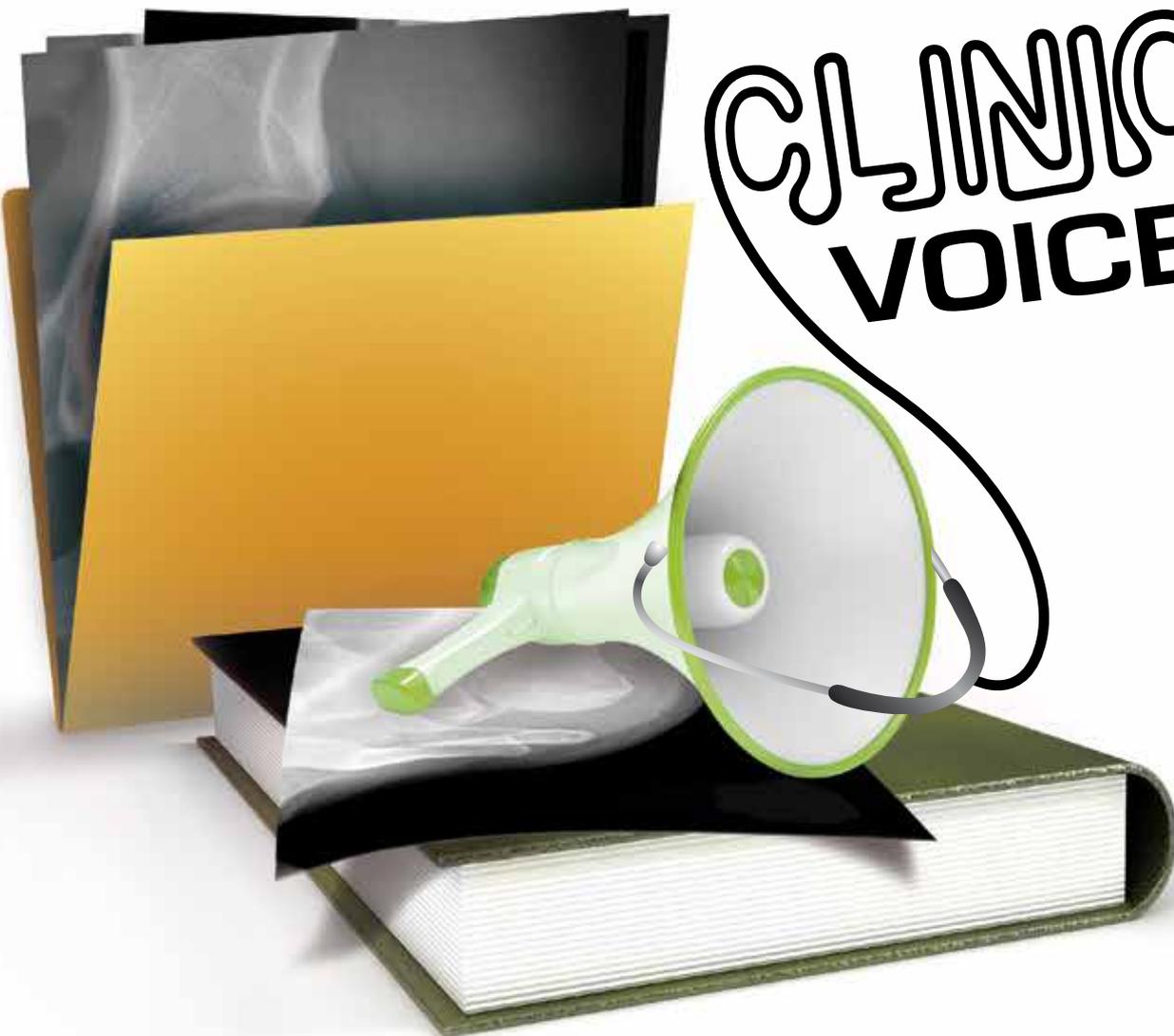


CONTOURS **PHIP**TM

Proximal Humeral Plate

CLINICAL
VOICE



Orthofix approach to Evidence Based Medicine:

For years, clinical decision-making was based primarily on physician knowledge and expert opinion. Now, the medical community is searching for measurable outcomes “validating” efficacy of treatments. Evidence Based Medicine (EBM) is an approach that integrates individual clinical expertise with the best available evidence when making decisions about patient treatment. (Nierengarten MB et al. Using Evidence Based Medicine in Orthopaedic Clinical Practice: The Why, When, and How-To Approach. Medscape Orthopaedics & Sports Medicine. 2001; 5[1]). Over the last few years, there has been a significant growth in Evidence Based Medicine.

DISCLAIMER

This document is not intended to substitute the “Contours PHP” instructions for use (leaflet), nor any product claim can be taken from it. For information and guidelines for its correct use, please refer to the “Contours PHP” instructions for use (leaflet).

This clinical case has been performed with the previous version of Contours PHP, which has the same stabilization concept and comparable biomechanical performances.

To receive a digital copy of this Clinical Voice please submit your request to:

CLINICAL AFFAIRS DEPT:

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To receive a digital copy of the “Operative technique”, please submit your request to:

CUSTOMER CARE:

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Proximal humerus fractures

Fractures of the proximal humerus account for about 5% of all fractures and are the third most common fractures in elderly people after hip and distal radius fractures¹. Treatment options include non-operative stabilization, surgical fixation and prosthetic replacement. Displaced and multi-fragmented fractures require surgical fixation to get satisfactory results. However, complex displaced fractures remain difficult to treat, because major complications, such as avascular necrosis of the humeral head, neurovascular injuries, malunions or non-unions, glenohumeral dislocations, rotator cuff injuries and subacromial impingement often occur. In addition, optimal functional recovery is not always achieved. The Contours PHP was developed as a treatment option for fractures, osteotomies and non-unions of the proximal humerus, particularly in osteopenic bone.

The Contours PHP

Orthofix Contours PHP has been designed and created in partnership with surgeons to fulfill in the best way their requirements for the successful treatment of proximal humeral fractures.



- The innovative design has been developed to obtain minimal invasiveness in terms of metal content in the humeral head.
- The low contoured head profile has been designed to reduce the risk of subacromial impingement.
- The suture holes are large to allow easy suturing and cerclage procedures.
- The Main Locking Calcar Screw, locked to the plate hence resulting in a single piece, provides frontal stability by transferring the primary load from the head to the diaphysis of the humerus.
- Additional stability is provided by the triangular configuration of the Main Locking Screw with the Fine Threaded Screws in crossing trajectories. This crossing configuration is a unique innovative solution for the treatment of proximal humeral head fracture. The Fine Threaded Screws reduce the amount of metal inserted in the humeral head, with the aim to preserve the bone stock preserving the bone stock and reducing further damage to its vascularity^{2,3}.
- The variable angle access of the Fine Threaded Screws and the simple instrumentation have been considered as key points to allow a versatile and easy plate application.



Case report

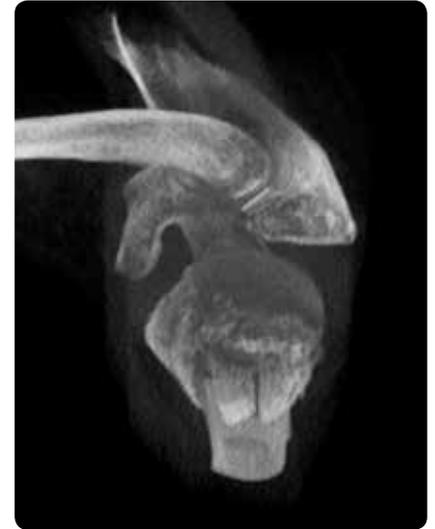
A 65 year-old osteoporotic woman sustained a 3-part fracture of the left proximal humerus (Fig. 1 and Fig. 2) as a result of an accidental fall in her domicile. The patient is a smoker and affected by hypertension and chronic obstructive pulmonary disease. The patient is an active woman, therefore she requires to recover full mobility quickly.



Fig. 1 Pre-operative X-rays



Fig. 2 Pre-operative CT scans



Operative technique

A 3-4 cm incision was made in the deltopectoral groove as described by Larghi

Steps

- Suture wires were passed through the rotator cuff tendons and pulled to verify if proper reduction can be accomplished
- Fracture reduction
- Insertion of the first Diaphyseal Screw
- Insertion of the Main Locking Screw
- Insertion of the remaining Diaphyseal Screws
- Insertion of the Fine Threaded Screws
- Suture wires were attached to the plate

Intra-operative details

- The fracture was successfully reduced
- Blood loss was limited and there was no need for transfusions
- No intra-operative complications were observed
- The duration of the operation was 65 minutes



Fig. 3 Post-operative X-rays



Follow-up at 1 month



Fig. 4 X-rays at 1 month

- The patient sleeps normally and reports moderate limitations to daily living and recreational activities
- Impingement is not observed
- No complications are noticed
- DASH SCORE: 54 (satisfactory result)
- CONSTANT SCORE without strength assessment: 29/75

Follow-up at 2 months



Fig. 5 X-rays at 2 months

- Healing status: consolidation
- The patient sleeps normally and reports no difficulties in common daily living and recreational activities
- Impingement is not observed
- No complications are noticed
- DASH SCORE: 25 (good result)
- CONSTANT SCORE without strength assessment: 54/75



Follow-up at 6 months



Fig. 6 X-rays at 6 months



Fig. 7 Recovery of ROM

- Healing status: consolidation
- The patient sleeps normally and reports no pain and no difficulties in common daily living and recreational activities
- Impingement is not observed
- No complications are noticed
- DASH score: 2.5 (very good result)
- CONSTANT SCORE without strength assessment: 73/75

Conclusions

The treatment of this complex fracture of the proximal humerus has been effective and has provided good clinical, radiographic and functional results already at 2 months after surgery.

In the second follow-up visit both scores improved greatly, indicating that fracture healing and functional recovery were progressing fastly and successfully. At 6 months functional outcomes were very good and the patient completely recovered ROM.

The short surgical time, the absence of complications and secondary loss of reduction and the very good functional recovery suggest that the Contours PHP can be considered as a valid treatment option for complex fractures of the proximal humerus.

We thank Dr. Daniele Clementi and Dr. Graziella Giaffreda, Ospedale di Circolo di Rho, A. O. G. Salvini, Italy, for kindly providing X-rays and case details.



References

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