

Deltoid splitting approach for surgical osteosynthesis in displaced proximal humerus fractures

Submission date 14/07/2017	Recruitment status No longer recruiting	☐ Prospectively registered ☐ Protocol
Registration date 26/07/2017	Overall study status Completed	☐ Statistical analysis plan ☒ Results
Last Edited 17/08/2018	Condition category Musculoskeletal Diseases	☐ Individual participant data

Plain English summary of protocol

Background and study aims

The humerus is the long bone that connects the shoulder to the elbow. When it is fractured, it is usually fixed using a less invasive surgical procedure called deltoid muscle splitting. However, this procedure has concerns about its effectiveness in aging people and complex fractures. The efficacy of the using a 'locking plate' needs to be evaluated using the anterolateral (located in front and to one side) deltoid splitting approach and specially examine the effect depending on the patient's age, gender and fracture type. The aim of this study is to evaluate the efficacy of a humeral locking plate using the anterolateral deltoid splitting approach and to specifically examine the effect of patient age, gender and fracture pattern on surgical outcomes.

Who can participate?

Adults aged 36 to 77 years old who have humerus fractures.

What does the study involve?

This is a case review study of proximal humerus fractures that are treated surgically with the Locking compression plate from 2009 to 2011. The researchers gathered data about the surgery, reviewed record and radiographs, as well as gender, age, fracture type and their follow up. This is done to assess the surgical outcomes to this procedure.

What are the possible benefits and risks of participating?

There are no benefits or risks with participating.

Where is the study run from?

Chang Gung Memorial Hospital (Taiwan)

When is the study starting and how long is it expected to run for?

December 2008 to June 2017

Who is funding the study?

Chang Gung Medical Foundation (Taiwan)

Who is the main contact?
Dr Alvin Chao-Yu Chen
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Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
No. 201700826B0

Study information

Scientific Title
Influence of age, gender, and radiographic features on the deltoid splitting approach for surgical osteosynthesis in displaced proximal humerus fractures

Study objectives
Examining the influence of the surgical approach for management of displaced proximal humerus fractures and to specifically examine the impact of patient age and fracture pattern on the outcomes.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Institutional Review Board of Chang Gung Memorial Hospital, 07/06/2017, ref: No. 201700826B0

Study design
Observational case-control study

Primary study design

Observational

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Examining the influence of patient demographics on the influence of surgical approach in displaced proximal humerus fractures

Interventions

This study retrospectively evaluated cases of unilateral proximal humerus fractures that were treated surgically with the Locking Compression Plate (LCP), as per the Neer classification criteria at our institute between 2009 and 2011.

Institutional review board approval was obtained to perform a review of patients' records and radiographs; informed consent was obtained from 132 patients with displaced proximal humerus fractures. All these cases of proximal humerus fractures either met the indications for operative treatment outlined by Neer or were considered unstable when tested for passive motion with an image intensifier.

Those with pathological fractures, head split fractures, open fractures, fractures with primary neurovascular damage, multiple fractures, and cases lost to follow-up are excluded from the study. Forty-two patients, who underwent anterolateral deltoid splitting surgery, are selected for a retrospective matched pairs analysis according to their age (younger than 60 years vs. older than 60 years), gender, and fracture type with a minimum follow-up of 24 months.

Intervention Type

Procedure/Surgery

Primary outcome(s)

Fracture healing is measured using the data from the cases.

Key secondary outcome(s))

1. Functional outcomes are measured using the data from the cases
2. Radio is measured using the data from the cases

Completion date

30/06/2017

Eligibility**Key inclusion criteria**

1. Displaced proximal humerus fractures. All these cases of proximal humerus fractures either met the indications for operative treatment outlined by Neer or were considered unstable when tested for passive motion with an image intensifier.
2. Aged 36 to 77 years old

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Sex

All

Key exclusion criteria

1. Patients with pathological fractures
2. Head split fractures
3. Open fractures
4. Fractures with primary neurovascular damage
5. Multiple fractures
6. Cases lost to follow-up were excluded from the study

Date of first enrolment

01/01/2009

Date of final enrolment

31/12/2011

Locations**Countries of recruitment**

Taiwan

Study participating centre

Chang Gung Memorial Hospital

5th

Fu-Hsin Street

Kweishan District

Taoyuan

Taiwan

333

Sponsor information**Organisation**

Chang Gung Memorial Hospital

ROR

<https://ror.org/02verss31>

Funder(s)

Funder type

Hospital/treatment centre

Funder Name

Chang Gung Medical Foundation

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Alvin Chao-Yu Chen, MD at alvinchen@cgmh.org.tw

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/12/2017		Yes	No