

# Favorite Options of German Hand Surgeons in the Treatment of Dupuytren Disease

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this day the majority of hand surgeons continue to recommend and exclusively perform various kinds of open surgery.

## 3.2 Background

In Germany pricing for newly authorized pharmaceuticals and their reimbursement by statutory health insurance providers are regulated by the Act on the Reform of the Market for Medical Products (AMNOG). If the new treatment is more expensive than established therapies, the critical question is whether there is a proven additional benefit of the new pharmaceutical over established treatments as selected by the Federal Joint Committee (G-BA).

In 2012 the German Institute for Quality and Efficiency in Health Care (IQWiG) performed a benefit assessment for XIAPEX® in the treatment of Dupuytren Disease. It was postulated that it is possible to define treatment options as appropriate comparators in relation to Tubiana stages describing the extent of disease.

For Tubiana stages N/I, I and II percutaneous needle fasciotomy (PNF) was chosen as appropriate treatment, because “various European guidelines and publications” including statements of the German Society for Surgery of the Hand (DGH) have demonstrated that PNF up to Tubiana stage II is “comparably effective” as the markedly more invasive Limited Fasciectomy (LF) (IQWiG 2012).

## 3.1 Introduction

Percutaneous needle fasciotomy (PNF) in recent years has become well accepted in the treatment of Dupuytren Disease (Eaton 2011; Pess 2012; van Rijssen 2006). Patients accept higher recurrence rates, because morbidity is low and minimally invasive procedures can be repeated in the case of recurrence (Eaton 2012; van Rijssen 2012). Although information on the percentage of surgeons performing PNF and the number of treatments are lacking, it is obvious that in Germany to

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During the formal hearing, the representative of the DGH estimated that about 20% of the members of this society perform PNF, whereas the representative of the pharmaceutical company estimated that only 3.6% of the procedures performed in Germany are PNF, the rest being fasciectomy.

The representative of the German Society for Plastic, Reconstructive, and Aesthetic Surgery (DGPRAC) estimated in this hearing that about 30% of the patients would be eligible for PNF.

### 3.3 Methods

To find out what their treatment plan for Dupuytren Disease is, we distributed an Internet-based questionnaire to all members of the DGH. Data were collected between January and March 2015.

Participants were asked to answer the questions below:

- How many Dupuytren patients do you treat per year (inpatient/outpatient)?
- Which Tubiana stages do you treat (all stages; II, III, and IV; III and IV; IV)?
- What type of treatment do you prefer in Tubiana stage I (II, III, IV) (LF, PNF, CCH<sup>1</sup>, other, none)?
- What are the criteria for your indication (low risk of complication, ease of performance, best outcome, others)?

Descriptive statistics were performed using Microsoft Excel.

### 3.4 Results

110 of 530 members responded (20.8%). These members declared to perform in summary 9,761 treatments per year. Since it is estimated that annually approximately 40,000 treatments are taking place,<sup>2</sup> 24.4% of these would be carried

out by the responders. The similarity of these ratios indicates that our questionnaire offers reliable results.

75% of the patients are treated on an outpatient basis. 40 (36.4%) of the responding surgeons are treating all patients, regardless of their stage of disease; 53 (48.2%) are treating only stage II, III, or IV; 16 (14.5%) are treating only stage III or IV. One surgeon stated that he only treats stage IV cases.

An overview of the preferred methods related to the stage of disease is shown in Fig. 3.1. The data are absolute numbers of surgeons that chose the particular type of treatment as their personal favorite in relation to the stage of the disease.

LF is the favorite option, independent of the Tubiana stage. PNF is being chosen mainly in stages I and II. "Other" summarizes all other treatments that are not CCH, PNF, or LF, e.g., dermofasciectomy. More than 40% of the surgeons are not treating patients with stage I at all (Fig. 3.1).

One surgeon stated that he treats only 2 cases per year; another one reported treating 400 cases per year. Since this represents a widespread of patient numbers, we defined a coefficient, derived from the number of patients in relation to the whole number of treatments (9,761), and calculated "weighted" treatment numbers.

Figure 3.2 indicates that surgeons treating larger numbers of patients prefer using PNF to a higher degree.

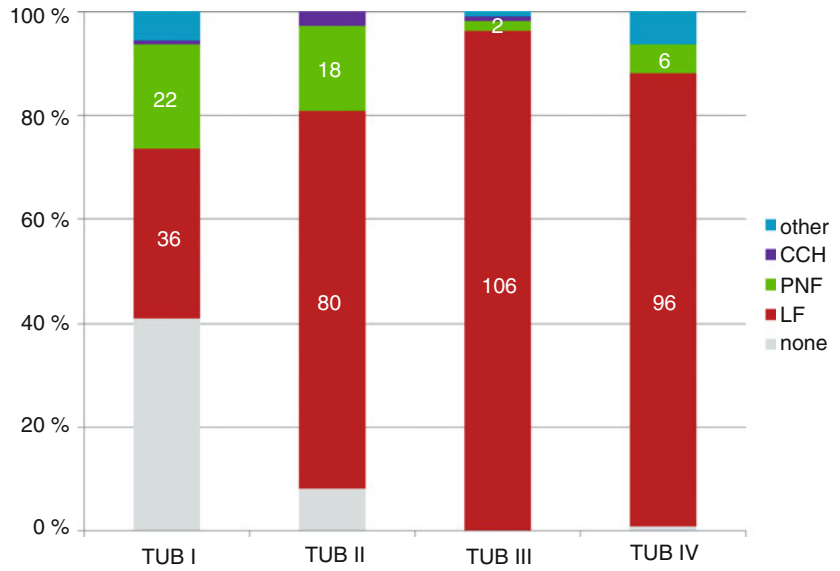
Interestingly, there is a homogenous distribution of case numbers within a subgroup of surgeons that treat up to 100 cases per year, while this is not true for the rest of the responders: those treating more than 100 cases form a heterogeneous group (Fig. 3.3). We therefore performed a subgroup analysis and compared a subset of 5,154 treatments performed by 86 surgeons, doing up to 100 treatments per year, with 4,607 treatments, performed by the remaining 24 surgeons.

The most impressive difference between both groups is in the comparison of preferred treatment options in Tubiana stage II: those performing more procedures favor PNF to a higher degree (Fig. 3.4). In other stages, preferences are very similar. Probably the higher number of PNF is

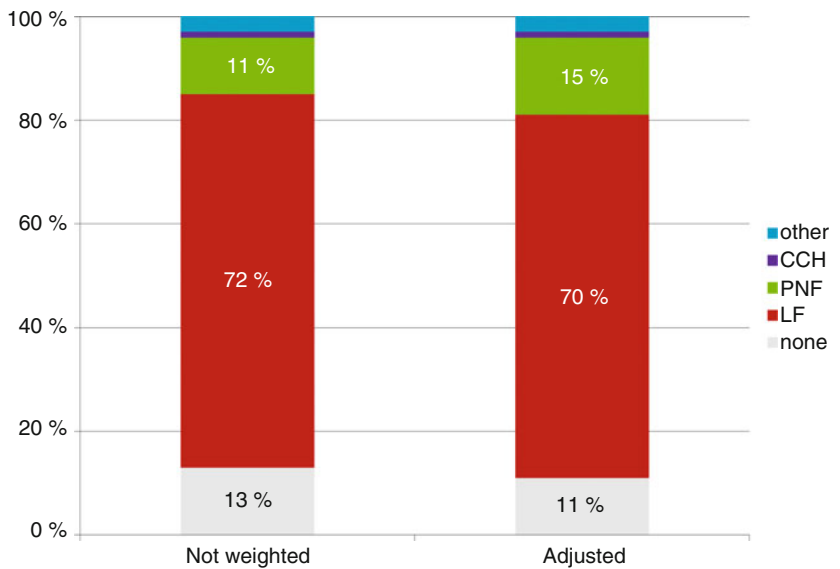
<sup>1</sup> *Clostridial collagenase histolyticum*.

<sup>2</sup> [www.dupuytren-online.de](http://www.dupuytren-online.de), assessed September 2015.

**Fig. 3.1** Surgeon’s preferred choice of treatment depending on stage of disease



**Fig. 3.2** Influence of treatment numbers (all Tubiana stages)



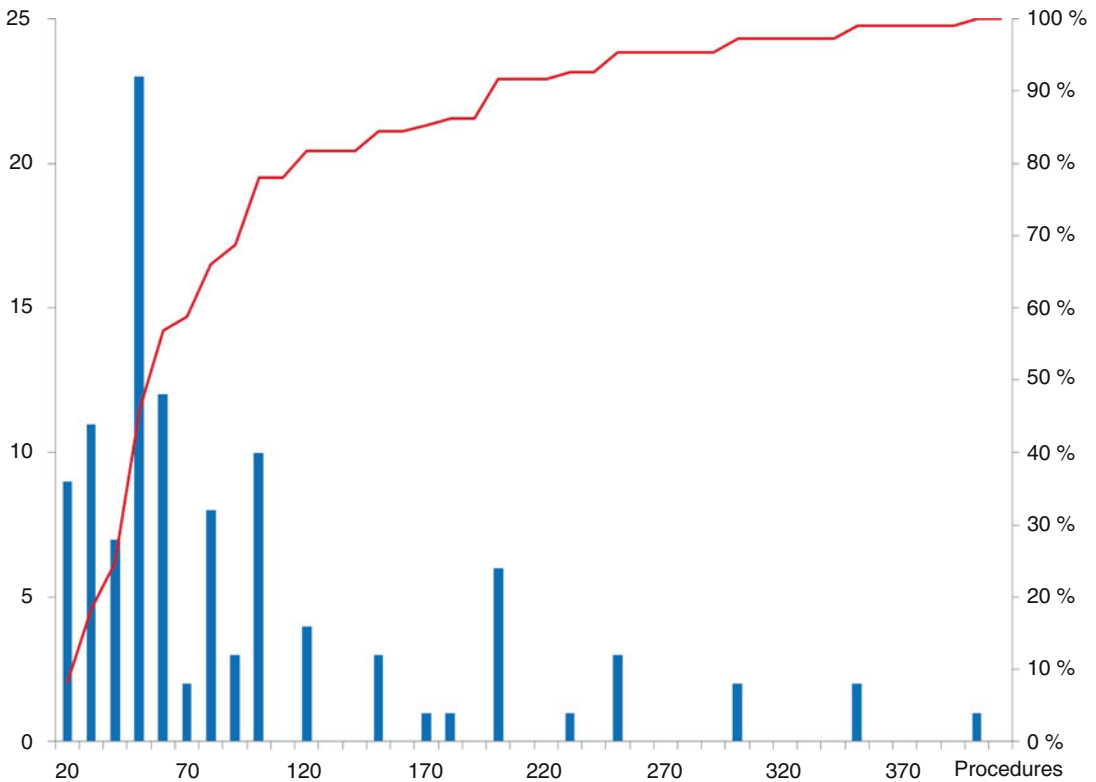
among the reasons why the percentage of one-day cases is significantly higher in the group with more than 100 treatments per year (30.1 %) than in the other one (19.9 %).

### 3.5 Discussion

Historically, although German hand surgeons were familiar with the fact that PNF was among the options for treating Dupuytren contracture,

the vast majority of them originally was skeptical about it. With Albrecht Meinel’s presentation of his first experiences at the annual congress of the DGH in 2008, interest rose, and a small group of German hand surgeons began PNF treatment. Promising reports in the German literature and increasing influence by patient organizations further increased the interest in this treatment option (Meinel 2008).

Nevertheless this survey is proving that today still a relatively small number of patients are being



**Fig. 3.3** Distribution of treatment numbers

treated with this method. This is remarkable considering that the G-BA has decided in 2012 that PNF is the standard procedure in early stages of the disease (IQWiG 2012).

It can be estimated from our data that about 15% of treatments of Dupuytren contracture in Germany are PNF and that up to 20% of German hand surgeons state that they do perform PNF. Also, surgeons treating larger numbers of patients are using PNF to a higher degree, especially in Tubiana stage II disease. Furthermore, those surgeons have a larger amount of outpatients.

Interestingly the estimated percentage of surgeons performing percutaneous needle fasciotomy in Western Europe (France, Germany, the Netherlands, the UK) is 40% and higher than in any other part of Europe, whereas only 41% of these surgeons are satisfied with the procedure, which is the smallest percentage compared to the rest of Europe (Dias et al. 2013). The skepticism

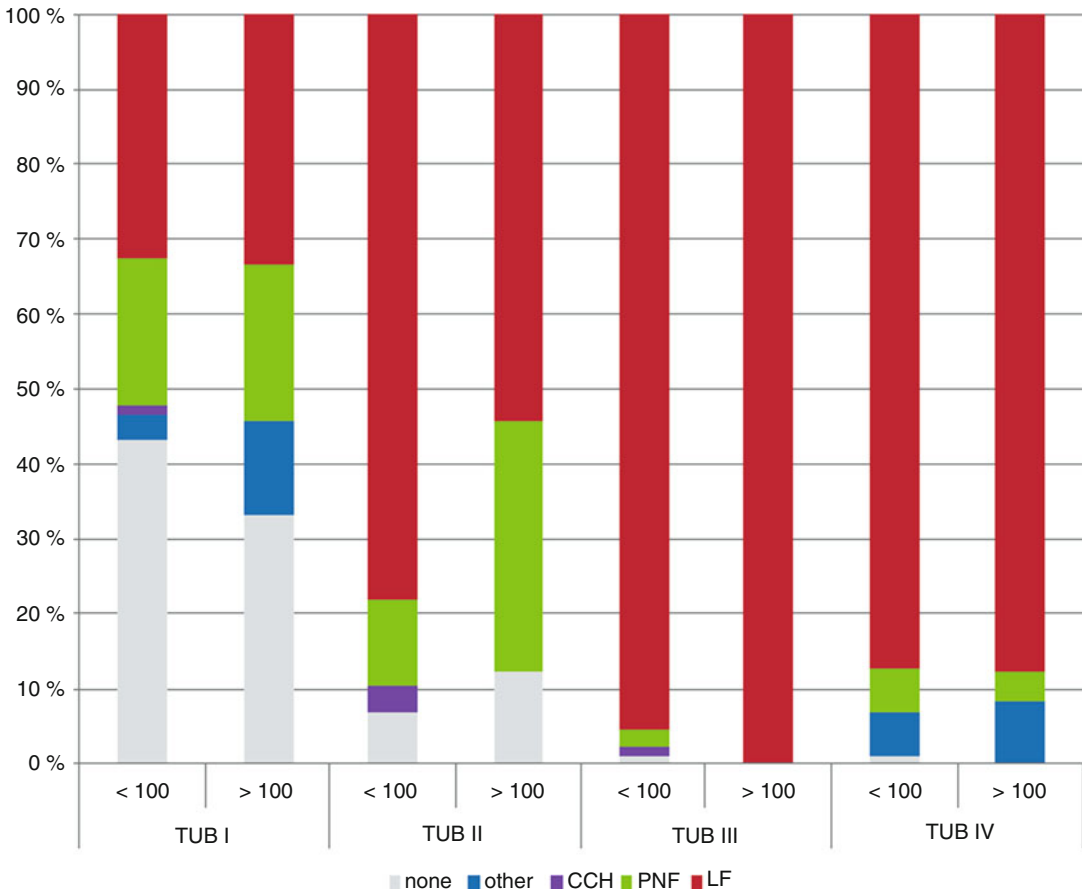
that we found in our study is reflected in this publication. Having in mind that there is probably a strong bias in that sense that surgeons performing PNF will probably have supported our survey to a higher degree than those who are in opposition to the treatment, our estimations probably are overoptimistic.

### Conclusion

PNF has been proven to be effective and safe. Since there is a high potential for this method, efforts should be made to further promote it among German hand surgeons. PNF should become part of instructional lectures and courses which are held by the DGH twice a year.

### Acknowledgment and Conflict of Interest Declaration

The authors would like to thank the German Society for Surgery of the Hand (DGH) for supporting this survey. The authors have no conflict of interest to declare.



**Fig. 3.4** Preferred treatment options depending on the stage of disease and comparison of subgroups defined by treatment numbers

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