

# Introduction

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Congenital wall defects, if no functional deficit by cardiac or pulmonary impairment exists in marked deformities, predominately encumber patients because of their unsightly aesthetically unpleasant stain. The appearance of such a deformity is not concealable unclothed and even clothed in the keel chest deformity may not be camouflaged due to its prominent bulge. During not only puberty but also during adolescence and later such deformities lead to shun behaviour and social retreat.

Not only for leisure-time activities, which are increasingly focused on life-style and body constitution, but also for the process of partnership initiation such a deformity stain represents a significant social handicap. The more seldom, true cardiopulmonary problems, caused by deep thoracic wall depressions with displacement or even compression of heart and lungs, usually are an exception for indication setting to thoracoplasty. In most cases however, the need for correction is based on evident social adaptive difficulties and impairment of worth living sense.

In former times and even a few decades ago thoracic deformities without or with only minor functional impairment were settled as a simple non-aesthetic stains, not at all considering the need for correction, thus they were scarcely corrected by surgical interventions. Here-with the psychic state of derangement of affected patients was not adequately considered or even neglected.

Potentially because of ignorance or lack of knowledge about therapeutic options and thus embarrassment, inappropriate medical counsels or advices were given to the patient like “it will resolve by time and body growth”, “one can camouflage it by clothing”, “muscle training cures the deformity” or “surgery is much too risky”.

Nowadays patients and parents, usually by means of electronic media, are much better informed about the available therapeutic options, occasionally even more in detail than some physicians and thus are much more demanding for correction of their unpleasant stain. Furthermore all available minor or major invasive methods of surgical and alternative supportive actions are more developed by technical and surgical methods nowadays. Increasingly minor deformities are re-

quested to be corrected as rather aesthetic interventions.

Since the publication of Donald Nuss about the success of the minimally invasive repair of pectus excavatum (MIRPE) in 1998 the demand for correction of all sorts of thoracic wall deformities boomed almost all over the world. The procession of the minimally invasive pectus-bar, a modification of formerly more invasive surgical methods is still ongoing. This above-mentioned publication by Nuss was a report of experiences predominately in children, but after a follow-up of 10 years though, it was very well suitable for reliable evaluation. Nevertheless in many institutions this report gave rise to a euphoric application to all sorts of funnel chest deformities and even up to late adulthood. It seemed to develop into a method of correction “for all seasons”. Ensuing to that a myriad of publications appeared in the medical literature databases. However, most of these quite early consecutive publications just described more or less small series of application and merely clinical observations without adequate or inadequate follow-up. There were only a few reports about the evaluation of distinct long-term results in different ages and genders or potential intricate complications. That is why, caused by euphoric presentation through all kinds of media in many places at times led to uncritical employment for all kinds of deformities even in aged adults with already rigid thoracic cages. The following and subsequent failures and rebounds in particular cases, although rarely published, induced the development of modified and combined techniques or led to reminiscence to established older methods.

However, the development is still going on and the MIRPE focuses on a defined but broad entity of funnel chest expressions and indications, whereas the ongoing discussion and confrontation with alternative methods defined special indications for the application of other available and occasionally more suitable techniques in children, adolescents and adults as well.

Nevertheless, many of the techniques described in the following chapters should be performed only at specialized centres, which fulfil the requirements of broad experience by sufficient numbers of cases treated. On the basis of the complexity of a broad

variety of expressions of anterior thoracic wall deformities the selection of an appropriate treatment procedure for the medical requirements and increasingly individual aesthetic claims requires much experience and mostly an interdisciplinary access and discourse, to offer the patient not only the best but also the correct procedure in every individual case. Thus adequate know-how about selective indication setting and skill for standard techniques equivalent to alternative methods may enhance the overall quality of selective treatment. Furthermore interdisciplinary access to an intensive care unit at any time and close relationship to thoracic surgeons

for the unintended case of severe potential complications conjoined to the invasive methods of correction must be available.

This book was initiated for the very reason of creating a wide-ranging survey over diagnostics and a multitude of different surgical treatment options for congenital thoracic wall deformities. It was also an endeavor to join established treatment procedures and expertise from abroad as well as alternative, even non-surgical interventions to provide with sufficient information for physicians in advance or during first consultations of patients afflicted with such congenital thoracic wall deformities.