

The modern approach to pectus repair

Since 1949, the Ravitch repair for pectus excavatum and carinatum was the gold standard.^[1] This is a destructive, aggressive procedure, which has a significant recurrence rate when it is poorly performed. When performed in the very young, it can result in an asphyxiating chondrodystrophy.^[2] This is a condition in which the chest wall fails to grow owing to the growth plates having been resected, resulting in pulmonary failure as an adult.

The Nuss procedure has replaced the Ravitch as the standard repair for pectus excavatum, and the Abramson procedure^[5] for pectus carinatum.^[3] The Nuss procedure involves placing a metal bar (stainless steel or titanium) under the sternum, under thorascopic control, to elevate the sternum anteriorly with forward pressure. The Abramson procedure places the bar anteriorly to the sternum, correcting the pectus carinatum by backward pressure. These are both minimally invasive procedures resulting in the chest wall retaining its stability. Contact sport at the highest level is possible after the operation. More recently, a dynamic chest brace for correction of pectus carinatum has replaced most surgical procedures.^[4] An alternative treatment for minor pectus excavatum defects is the vacuum bell developed by Klobe.^[6] This is a suction device that the patient wears for 2 hours per day to elevate the excavatum.

Although pectus deformities are cosmetically disfiguring, it has also been shown that 80% compress the right ventricle, causing a 38% decrease in cardiac output. It also decreases the pulmonary function by an average of one standard deviation.^[3] A very important consideration is the deformity's psychological effect on young people, often leading to major depression, including suicide.^[7]

Following the repair of pectus excavatum, the patients are physically more able to partake in strenuous sport, emotionally more stable and in all other aspects, able to live their lives as healthy people.

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