Pitfalls in Cervical Spine Surgery

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Pitfalls in Cervical Spine Surgery

Avoidance and Management of Complications

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Foreword

Over the last 20 years there has been a marked increase in spinal surgery and in particular procedures on the cervical spine; the increase is expected to continue for the next several decades. The results of surgery for cervical radiculopathy and myelopathy have been good on the one hand, and on the other, the public no longer are content to live with spinal deformity; both will result in an increase of surgery. The general availability of CT and MRI scans have outlined the pathology for both the surgeon (who can plan exactly) and the public (who wish for more); the latter are extremely well informed of the expected benefits and the possible complications of surgical intervention, from the internet.

So this book by Professor Denaro and his colleagues is timely in that it faces up squarely to the avoidance of complications and their rapid and appropriate treatment.

The book begins with the important philosophical approach that the cervical spine is imbedded within a complex soma, whose general health or lack of it, will influence greatly the expected outcome of any surgical intervention. This cannot be over-emphasised as, too often in the past, the temptation has been to "operate on the X-rays and not the patient". With rising costs, healthcare providers, both hospitals and national health services, require information on the "value" for a specific procedure; complications requiring prolonged hospital care or inability to work will negatively influence allocations of resources.

In the second section, they emphasise the importance of a detailed anatomical knowledge on which to base the surgical approach. The risks to the vertebral artery, recurrent laryngeal nerve and the sympathetic chain are obvious examples of structures that are vulnerable when there is scanty anatomical knowledge. Newer approaches, particularly those to the upper two vertebrae and the cervicodorsal junction, require knowledge not usually part of conventional neurosurgical or orthopaedic curriculum. In these areas, collaboration with other disciplines (head and neck, and maxillofacial and thoracic surgery) cannot be over-emphasised.

The subsequent sections cover the potential "pitfalls" associated with trauma, tumours, inflammatory bone diseases and rarer vascular abnormalities and spinal cord problems such as syrinogomyelia. The knowledge base is expanding at an intimidating pace and the authors' reference lists are wide and very up to date.

As the society reflects its demands for (sometimes instant) "cures" for conditions related to neck pathology, it requires information on the risks and benefits of a proposed surgical intervention. They now come as individual patients to surgeons with

much better information than ever before. It is essential that spine surgeons prepare themselves to carry out the procedures with minimal complications and also be able to put in context for the individual patient the advantages and potential drawbacks of their personal treatment plan.

This book sets about addressing such issues. I warmly commend it.

London, UK Prof. Alan Crockard, Dsc, FRCS, FRCS (Ed.) FDSRCS (Eng.)

Foreword

Cervical spine surgery has been largely used in the last decade following the refinement and continuous development of new instrumentation. Young surgeons are more widely familiar with these techniques and attend training practical courses. As a consequence, there is a high risk of enlarged surgical indication for cervical disease. A wise evaluation of suitable candidates and a correct choice of the best surgical technique on an individual basis are the main strategies to avoid complications in the surgical management of these patients. This book deserves highest consideration because it presents a wide range of possible complications allowing the reader to be aware of them and helping in the decision-making process.

The volume content is based on the large surgical experience and the skilful technique of the authors.

This is an outstanding contribution added to the related literature because only the thorough knowledge of the pitfalls helps to prevent them. The complication avoidance is crucial and can be considered an essential adjunct to the surgical armamentarium.

The authors have to be congratulated for the excellent focus on important aspects of this surgery. They deserve our appreciation because they emphasise several tips and tricks useful in achieving greater chances of clinical success.

References are reported providing further support to the knowledge.

Definitely, this volume will be of paramount interest for spine surgeons, both neurosurgeons and orthopaedists.

Messina, Italy Prof. Francesco Tomasello, MD

Preface

This book aims to guide the reader through the myriad of complications that may occur in patients undergoing cervical spine surgery: in this way, the surgeon can learn how to try to avoid them, when possible, and to tackle them when they have occurred.

It is important to understand the pitfalls from the patient's perspective. Patients seem better disposed to understand that some complications can be intrinsic in this surgery if their original symptoms were more debilitating, and can find a causal link between the symptoms and the complication. On the other hand, it is difficult for patients to accept complications when symptoms leading to surgery were not serious, even though imaging and electrophysiology studies confirmed the correct indication to surgery.

A very important moment in the preparation of the patient to surgery is the process of informed consent.

From my yearly experience in the field of cervical spine surgery, I learned that pitfalls in cervical spine surgery may be divided into unpredictable and predictable. Obviously, only the latter can be considered as avoidable.

A classical example of an unpredictable pitfall is the deep venous thrombosis following technically well-performed surgery on the correct patient, with the correct diagnosis, indication, and with adequate prophylaxis.

The pitfalls defined as avoidable may arise from several factors: wrong diagnosis, wrong indication and wrong surgery (both in excess – i.e. when performing wide stabilisation – or in defect – i.e. performing incomplete decompression).

There are also difficult situations, when the surgeon is forced to operate because the pathology, for example, a tumour, imposes to perform adequate resection of the tumoural mass with the sacrifice vascular or myelo-radicular structures. These pitfalls are predictable, but unavoidable.

Another common pitfall is a false-positive investigation, interpreted as pathological before considering the presenting signs and symptoms. In tertiary referral practice, many patients are seen for the first time after a host of tests have already been performed. Diagnoses formulated only on the basis of tests, which do not take into account the history and clinical examination of the patient, may induce to operate on the images, and not on the patient. At times, we are guilty of not taking a thorough history and not performing a thorough physical examination, and of relying too much on investigations. This can be particularly true for patients who are anxious and afraid, in whom the inexperienced surgeon may be led to operate.

Also, the anatomy of the spine is complex, but the language used to describe pathology may be even more complex. The absence of universal standardisation of spinal nomenclature with respect to the definition of a disk herniation and its different categories, especially regarding type and location, is still a major problem. Classically, in the presence of a report describing a bulging disk as an herniation, the patient will find sooner or later a surgeon who will operate on him/her.

In this era of high technology in clinical medicine, new devices (i.e. cervical arthroplasty) and minimally invasive techniques are proposed for the management of disorders of the cervical spine. However, classical techniques should not be abandoned until strong evidence in favour of new techniques is available.

Surgery is not the only solution to patient's problems: often conservative management is the best solution!

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