



ELSEVIER

Contents lists available at ScienceDirect

Best Practice & Research Clinical Endocrinology & Metabolism

journal homepage: www.elsevier.com/locate/beem

Preface

Modern endocrine surgery – Striving for a better quality of life



The present and preceding issue of *Best Practice and Research Clinical Endocrinology and Metabolism* are the first issues devoted wholly to recent developments in endocrine surgery. Over the last decades, endocrine medicine has evolved into a highly complex discipline in its own right. Surgical procedures have become an integral part of this evolution, as have advances in surgical techniques. Endocrine surgery today is much more specialized than it used to be in the past. In pursuit of high-quality care, this specialty endeavors to promote more precise, less invasive and less harmful procedures, which are equally, if not more, effective. Whereas the first issue of Modern Endocrine Surgery revolves around the most frequently affected endocrine organ, the thyroid gland; the present issue highlights recent progress in surgery for uncommon endocrine disorders of the parathyroids, adrenals and paraganglia, as well as duodenopancreatic and intestinal neuroendocrine tumours.

When asked to identify the most important Drivers behind the recent progress in endocrine surgery, there are three to be named: learning more about endocrine and tumour biology, modern diagnostic modalities and medical concepts from our interdisciplinary endocrine partners; using less invasive approaches to endocrine organs; and critical feedback on our own surgical results. The present issue of Modern Endocrine Surgery summarizes challenging areas that demand interdisciplinary collaboration, marrying the latest evidence from the literature with the comprehensive personal experience of expert surgeons.

Parathyroid gland surgery previously relied on the frozen section to assess the adequacy of parathyroid resection during the operation. The advent of intraoperative parathyroid hormone (IOPTH) measurements has revolutionized this practice, turning IOPTH into some sort of 'biochemical frozen section'. This technique also has limitations of its own, as described by Bhangu and Riss, such as cost, the time until the test result becomes available, and the difficulty of defining thresholds that distinguish well between single-gland- and multi-gland disease. In this setting, surgical experience is still of paramount importance, as highlighted by Erinjeri and Udelsman. How many parathyroid operations should be performed; what is the minimum number of parathyroidectomies required for excellent surgical results? After carefully dissecting the pertinent literature, the authors arrived at the following conclusions: for initial parathyroid exploration, an independent surgeon should have 'a track record of no fewer than 30 parathyroid operations, ideally 60 or more; and for remedial parathyroid exploration, a track record of no fewer than 15 cases, ideally 30 or more.' On balance, this recommendation appears reasonable.

The area of competency for endocrine surgeons is hotly contested. Should endocrine surgery be limited to the thyroid and parathyroid glands, which are at the heart of endocrine surgery, or be extended to encompass the abdomen and retroperitoneum as well? The latter two body cavities

infrequently harbor endocrine disease and need different surgical skills and experience. Familiar with abdominal and retroperitoneal anatomy, visceral surgeons and urologists, respectively, have ventured into this territory. At this stage, the volume–outcome relationship reappraised by Kazaure and Sosa becomes highly relevant. On the basis of lower morbidity, mortality and cost, these authors found sufficient evidence to suggest that patients should be operated on by high-volume surgeons carrying out no fewer than six adrenalectomies per year. As the number of laparoscopic and retroperitoneoscopic adrenalectomies has considerably risen over the past 2 decades, so has the demand for high-quality surgical care. Therefore, it may be prudent to also refer patients with adrenal disease to high-volume endocrine surgeons.

Non-secreting parasympathetic paragangliomas (PGL) of the neck, and catecholamine-producing sympathetic PGL of the abdomen and pelvis, rank among the rarest endocrine diseases endocrine surgeons are confronted with. Germline mutations give rise to 40% of PGL, with genotype–phenotype correlations as those seen in MEN 2. Owing to heterogeneity in presentation, anatomic location, multifocality and the inherent risk of malignancy, hereditary PGL can pose a challenge to endocrine teams composed of geneticists, endocrinologists, radiologists, pathologists, anaesthetists and surgeons. The latest evidence on neck, chest, abdominal and retroperitoneal PGLs is reviewed in depth by Iacobone and coworkers. These authors emphasize the importance of routine genetic screening and morphological-functional imaging to individualize surgical treatment and follow-up.

Four chapters focus on surgical strategy and new techniques for duodenopancreatic and intestinal neuroendocrine tumours. Among duodenopancreatic neuroendocrine tumours, the MEN 1-associated Zollinger–Ellison Syndrome (ZES) is appealing in many ways to endocrine surgeons. In MEN 1-associated ZES, the gastrinomas typically lodge within the duodenum, not inside the pancreas, and are multifocal. Because these tumours frequently co-exist with other neuroendocrine tumours of the pancreas (PNET), complex and highly individualized surgical strategies need to be devised to preserve insulin secretion for as long as possible, as detailed by Albers and coworkers. Unlike MEN 1-associated ZES, which remains the realm of open surgery, PNET, notably those confined to the pancreatic body and tail, are increasingly subjected to minimally invasive enucleation, and central or distal pancreatectomy, as elaborated by Gharios and coworkers. Unlike minimally invasive left pancreatectomy, right pancreatectomy and pancreatoduodenectomy by laparoscopy are no longer recommended because of greater morbidity and mortality (10% versus 2%), which enforced premature termination of a prospective randomized trial. Minimally invasive surgery, including robotic surgery, for PNET is a new fascinating field that requires extensive surgical expertise and close collaboration among surgical and non-surgical experts. International prospective, randomized trials and high-quality tumour biobanks are needed to clarify the natural history of PNET over an extended period of time.

The last two chapters in this issue of Modern Endocrine Surgery deal with topics that are hotly debated on tumour boards: surgery for metastatic small intestinal neuroendocrine midgut tumours (SINET) to preempt intestinal obstruction, reviewed by Weber and Dralle; and the differential approach to rectal neuroendocrine tumours (RNET), discussed by De Mestier and coworkers. As for preemptive surgery for obstructive SINET, a survival benefit yet remains to be shown. Although several studies demonstrated a survival benefit for stage 4 PNET, information on metastatic obstructive SINET is scarce and hard to interpret. Careful history-taking with an emphasis on symptoms of intestinal obstruction, assessment of the tumour burden at hand, consideration of the patient's physical shape, and the effectiveness of medical treatment help devise targeted treatment plans tailored to the individual patient. Unlike metastatic SINET, RNET are a perfect example for “choosing wisely” the best oncological operation for a patient with localized disease in an anatomically complex area. Rectal endoscopy followed by endorectal endoscopic ultrasonography and cross-sectional pelvic imaging are critical in defining the borders of the tumour, extension beyond the confines of rectum, and tumour spread to perirectal nodes. In their conclusion, De Mestier and coworkers succinctly state that, barring RNET with adverse features that require radical transabdominal surgery, low-risk RNET ‘can be treated locally, probably at best using ligation-assisted endoscopic submucosal resection for lesions of or <10 mm, and endoscopic submucosal resection or transanal endoscopic microsurgery for lesions sized 10–15 mm, in expert centers because they require technicity and experience.’

In view of rising incidence of neuroendocrine tumours, the Guest Editors of the present and the preceding issue of Modern Endocrine Surgery are most grateful to the Editor-in-Chief and the Editorial

Board of *Best Practice and Research Clinical Endocrinology and Metabolism* for the opportunity to showcase the recent progress in the operative treatment of endocrine disease. This collaborative effort would not have been possible without the unwavering efforts of those outstanding colleagues and experts who dissected the current body of evidence and enriched it with their personal experience in the field. Special credit goes to the Managing Editor, Mrs. Maysoon Delahunty, for her unflagging commitment and continuous professional support. We trust that both issues of *Modern Endocrine Surgery* may stimulate further research in the field, in pursuit of better personalized care and greater quality of life for our patients.

Henning Dralle, Prof Dr. med. Dr. h.c. mult., Frank Weber, Priv. Doz. Dr. med.*
Department of Surgery, Section Endocrine Surgery, Essen University Hospital, 45147 Essen, Germany

* Corresponding author.
E-mail addresses: henning.dralle@uk-essen.de (H. Dralle), Frank.Weber@uk-essen.de (F. Weber).

Available online 28 September 2019