

4TH INTERNATIONAL CONGRESS

AORTIC SURGERY AND ANESTHESIA "HOW TO DO IT"

www.aorticsurgery.it

NEWS

A warm welcome from Professors Chiesa, Zangrillo and Alfieri

A very warm welcome to the fourth edition of the international congress: "Aortic Surgery and Anesthesia – How to do it" from **Prof. R. Chiesa, Prof. A. Zangrillo, Prof. O. Alfieri and Dr. G. Melissano**. We greatly appreciate your attending our meeting. Eight years after the first edition, we are sure that you will experience a much richer symposium but the mission of the meeting is unchanged and remains strictly practical and focused.



Prof. Roberto Chiesa

We have chosen a new format in order to offer very intense dynamic sessions of rapidly paced presentations (5 min) and comments (2 min) followed by a brief panel discussion. This will allow in only two days to share the opinions of over 200 distinguished faculty members from North and South America, Asia and all of Europe. In spite of the worldwide economic problems the number of participants has increased since the third edition and it is a great satisfaction to announce that in 2010 we have over 1000 registered delegates. On the occasion of the congress we also have the pleasure to introduce the book "Thoraco abdominal aorta: surgical and anesthetic management" a 758 pages volume edited by Springer. This is a very important contribution to the knowledge in this complex field. **Prof. Chiesa** would like to commend **Dr. G. Melissano** for his important contribution and would like to thank **Prof. J.S. Coselli** for his help as guest editor and for writing a foreword to the book. Moreover we will also distribute to all the delegates the booklet "Planning and Sizing della patologia aortica con OsiriX" by **Drs. Melissano, Civilini and Bertoglio**. This manual will be very helpful in order to use the



Prof. Alberto Zangrillo

open source free software OsiriX to view and reformat scans for the preoperative assessment of patients with aortic disease. Last but not least would like to gratefully acknowledge our sponsors and partners for their support. Please visit the exhibits and talk to the exhibitors, you will find state of the art innovative products that will help delivering the best possible care to the patients.

SAN RAFFAELE SCIENTIFIC INSTITUTE
Conference Hall



2010

Continuous innovation is improving the outcomes of aortic surgery

"Complicated does not mean impossible", says professor J. Coselli. While aortic surgery is complicated, good outcomes are achieved world-wide, especially in elective cases of repair. Aortic surgery has been characterized by continuous innovation; consequently, aortic repair has evolved not only to improve survival [rates], but also to encompass adjuncts designed to ameliorate specific surgical morbidities, such as cerebral, renal, and spinal cord ischemia. However, the strategy of repair remains largely dictated by the extent of repair; thus, operative strategy and expected outcomes vary tremendously with the extent of the aorta that requires replacement. Repair of the aortic arch and thoracoabdominal aorta tends to pose greater surgical risk. Traditionally, aortic arch repair has involved cooling the patient to a profoundly low temperature (below 20°C) as part of hypothermic circulatory arrest. Recently, however, there has been great interest in using more moderate temperatures (above 20°C, possibly as high as 28°C) in combination with improved cerebral perfusion techniques, such as ante-

grade cerebral perfusion with axillary artery cannulation, and with improved debranching techniques, such as the Spielvogel's trifurcated graft technique. Being able to provide satisfac-

tory cerebral protection at a more moderate temperature could possibly protect patients against temperature-induced coagulopathy. Patients who undergo replacement of the entire thoracoabdominal aorta (Crawford extent II) continue to have the highest rates of early death, spinal cord deficit, and renal failure. Most centers use a multimodal approach to minimize mortality and morbidity. Treatment strategies commonly include cerebrospinal fluid drainage, distal aortic perfusion, and cold renal perfusion. Recently, **Prof. J. Coselli** and his group published the results of their second randomized clinical trial of cold renal perfusion. Although they had anticipated that cold blood would better protect the kidneys than cold crystalloid, they found no significant difference in renal protection, which was adequate with both perfusion methods. However, **Prof. J. Coselli** currently prefers to use cold crystalloid because it is somewhat easier to implement. With sufficient study, a superior renal perfusate may be developed. According to **Prof. J. Coselli** aortic surgery is not a static field, but one that is continuously refined and improved.



Prof. Josef Coselli



AORTIC SURGERY
AND ANESTHESIA
"HOW TO DO IT"

© Tutti i diritti riservati

Responsabile:
Prof. Roberto Chiesa

A cura di:
Germano Melissano
Davide Logaldo

Progetto grafico:
Marco Modeo

Prestampa e Stampa:
Arti Grafiche Colombo
20060 Gessate, Milano

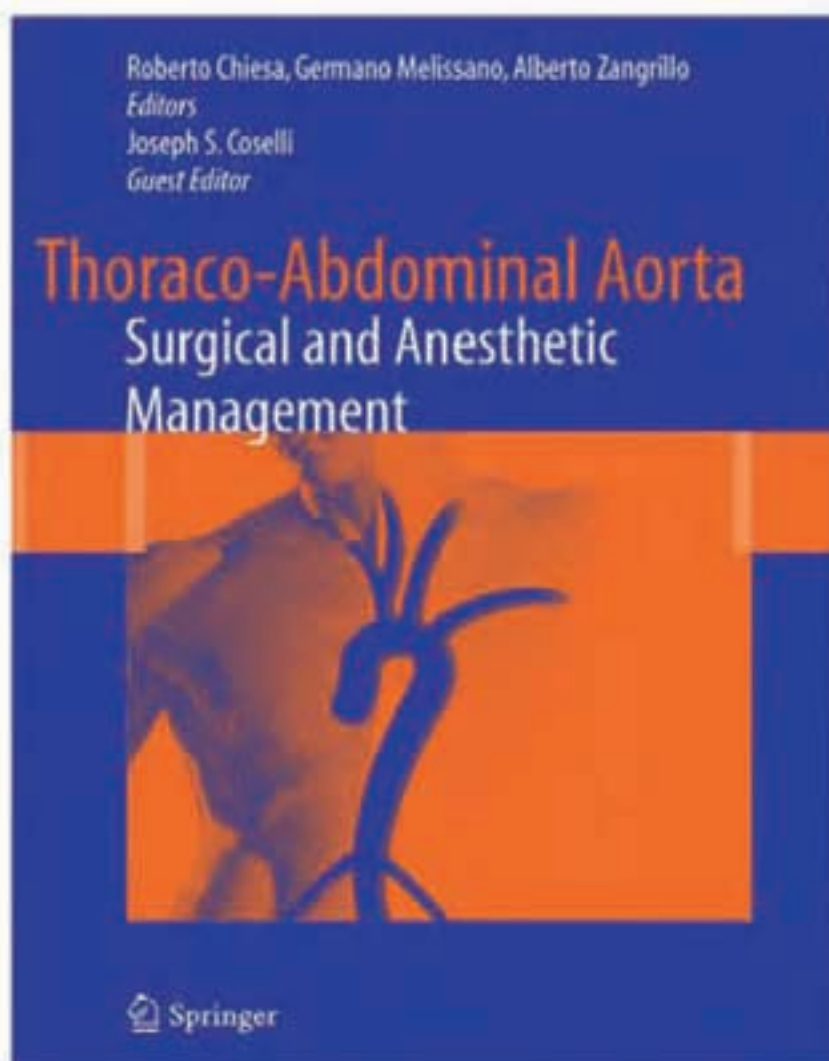
Endovascular repair of TAAA



The conventional treatment of thoracoabdominal aneurysms is life saving but one of the riskiest procedures in the context of expected morbidity and mortality. "The endovascular treatment of such pathology has undergone rapid development", states **Prof. Greenberg**, "and in our center is the preferred method of treatment in all but younger patients with this disease. The results have been very good with a

reduction in perioperative mortality of about 50% and near elimination of morbidities associated with pulmonary compromise". However, the endovascular and open surgical procedures are still confronting unsolved challenges including issues with renal insufficiency and a risk of paraplegia.

Prof. Roy K. Greenberg



"...Aortic surgery was, and continues to be, a collaborative effort in which the best approaches are identified and shared. As is evident at the San Raffaele Scientific Institute, the collaborative approach frequently results in outstanding patient care. As I approach the personal milestone of completing 3,000 thoraco-abdominal aortic repairs, I look back fondly to the surgical mavericks of the past, who helped make my success possible. At the same time, I look forward to ongoing collaboration, such as with the outstanding clinicians at San Raffaele, as I continue to refine my operative approach..."

Joseph S. Coselli
Joseph S. Coselli, MD
Guest Editor

Available on www.springer.com
or your online bookstore

Will antibiotic loaded grafts lower infection rates?



Infection remains a major complication in vascular surgery, with an incidence never below 2% for aorto-iliac prosthetic replacement, despite all preventive measures. Nothing is new about patho-physiology, microbial spectrum, and diagnostic.

Arterial allografts are still the reference material for in situ replacement, but rifampin soaked grafts also give encouraging results in selected cases.

"Antibiotic loaded grafts will probably be a new option in the presence of graft infection or in patients with prosthetic infections, but prospective trials and registers are needed", says **Professor Goeau-Brissoniere**. In parallel, the infection or risk of infection of endovascular devices have to be taken into accounts, with the same prospective.

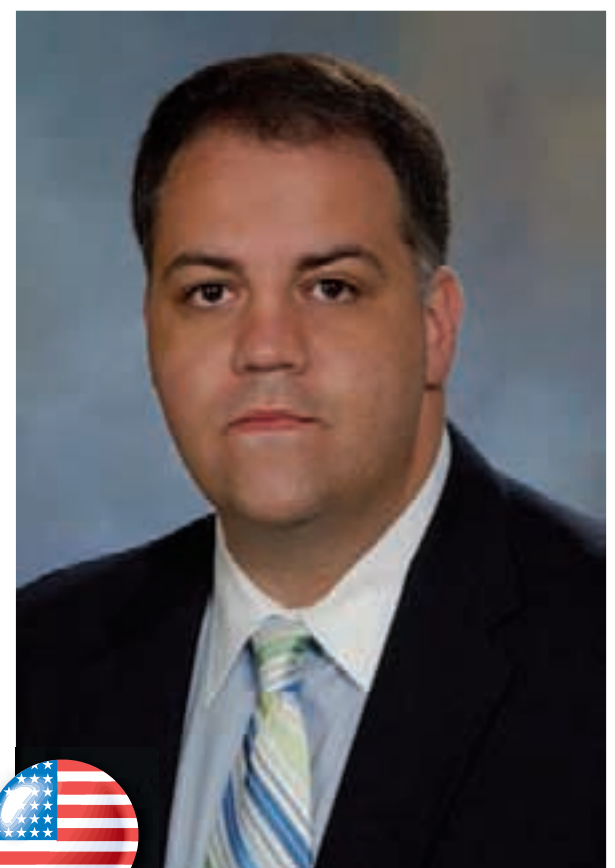
Prof. Oliver A. Goeau-Brissoniere



Surgeon-modified fenestrated and branched endografts

Fenestrated and branched endografts have been developed as a minimally invasive, total endovascular alternative for the treatment of complex aortic aneurysms in high-risk patients. However, construction of these devices requires that they are custom-made to fit the specific anatomical requirements of each patient. As a result, it can take as much as six to twelve weeks to manufacture these devices. Access to investigational devices and delays for device customization, limit treatment with these endografts to a small group of patients with relatively stable aneurysms. The question often arises: how can we treat patients unfit for open repair or debranching procedures who present with symptomatic or ruptured complex aortic aneurysms and can not wait for a custom fenestrated/branched endograft to be created? "At Emory, in these circumstances, we have used surgeon-modified fenestrated and branched endografts by modifying commercially available aortic endovascular stent grafts with reinforced fenestrations as well as cuffed-branches" answers **Professor Ricotta**. "We have been extreme-

ly conservative in our implantation of these devices, and have restricted their use to patients in whom open surgical repair is prohibitive, and to those who can not wait for a custom-made graft from the manufacturer because of impending rupture or rank rupture of their aneurysm or for patients who are unable to travel outside of the United States or to centers where the commercially manufactured devices are available", he adds. Surgeon-modified fenestrated or branched devices may play an important role in the treatment of selected high-risk patients with symptomatic or ruptured aneurysms that cannot be repaired with open surgery because of co-morbidities and cannot wait the time required for device customization. "Until the commercially made fenestrated/branched devices become more widely disseminated, and until an 'off the shelf' device is created that does not require a prolonged waiting period, this may be the only option we have to treat these patients with symptomatic or ruptured complex aneurysms that are at excessively high surgical risk", concludes **Prof. Ricotta**.



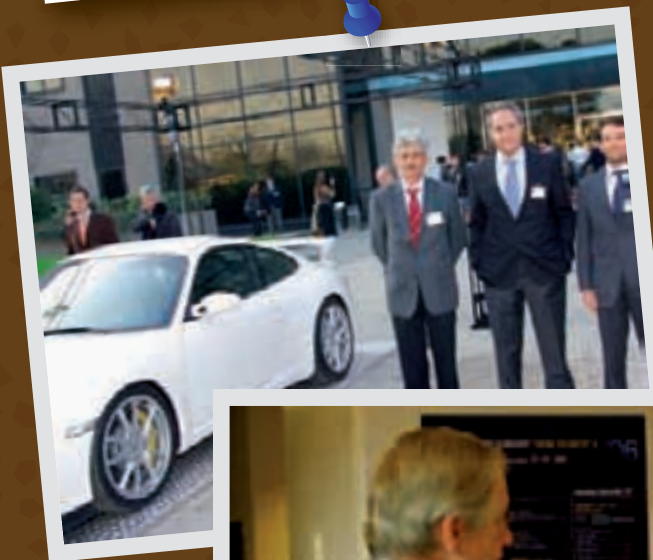
Prof. Joseph J. Ricotta



previous
editions



2004



2006



2008



Reinterventions in the endovascular era

Conversion to open repair represents a small part of secondary reinterventions after endovascular failure. However, with the growing number of abdominal aneurysms (AAA) treated by stent-graft with an important follow-up, management of stent-graft failure is becoming a current and challenging issue. The true rate of late conversion is difficult to estimate since strongly dependent on follow-up length: in studies with more than 36 months follow-up after aortic endovascular repair (EVAR) this rate is estimated to be between 3.2% to 4.5% and this incidence seems to be unchanged or even increasing in the recent studies. Fortunately, most of the late conversions can be planned with elective repair carrying low operative risks with most series reporting zero mortality. However, the conversion risk depends on the baseline risk profile of the patients and therefore mortality /morbidity rates after late conversion might be higher even in the recent years (8.3% according to the French multicentric AURC). Mortality sharply increases in the need of emergent late conversion, such as in case of rupture. Therefore, according to **Professor Cao**, the first lesson is that close patients follow-up after stent-graft repair over time is still today lifelong needed. Accurate analysis of any morphological or structural change with appropriate imaging technique may reduce the risk of acute onset of complications (mainly AAA expansion, with or without migration or type I endoleak) with the following need of urgent open conversion and may allow safer scheduling of open repair when needed. "A second message from stent-graft experience is that need of stringent follow-up is especially required for the first-generation devices still largely worldwide implanted in the past years. Indeed the design and durability of stent-grafts had undergone major improvements in the last decades. For instance, first-generation devices

had thin fabric and higher rate of stent fatigue, tear and fracture. Fourth-generation devices had almost eliminated most of these complications with stronger fabric and better stent support (less metal corrosion and better attachment techniques to the graft)", says **Prof. Cao**. This was evident also in published randomized trials (RCT) comparing stent-graft with open surgery in EVAR: the lower rates of aneurysms-related death and complications in OVER trial compared to the other EVAR trials could be partially explained by endograft improvements. The investigators in both the EVAR 1 (performed in years 1999-2004) and the DREAM (years 2000-2003) trials used mainly second-generation and third generation devices while in the OVER study (years 2002-2008), third and fourth generation devices were employed. As a result, the reintervention rate was significantly higher after EVAR in the first two trials while this was not the case of OVER: 12.5% in open vs 13.7% in EVAR.4 Nevertheless, OVER provided data up to 4 years after repair and long term follow-up for OVER needs to confirm whether the improved section criteria and technology would make durability of stent-graft really improved.

Prof. Cao thinks that other issues on how to best manage late conversion after stent-graft failure

are related to the prevention and the technique. The occurrence of complications leading to conversions (Type I endoleak, migration, disconnections, neck enlargement) is strongly affected by the baseline aneurysm fitness for stent-graft repair. These complications most commonly develop in larger aneurysms, with wide, short angulated neck or calcification. Selection of

best suitable anatomy could decrease the risk of late conversion especially in high risk patients in whom delayed repairs can carry relevant surgical risks, especially in urgency.

With the large acceptance of endovascular treatment of thoracic aortic pathology, failure of thoracic endovascular aortic repair (TEVAR) comprises today a new "aortic pathology".

Secondary endovascular treatment is feasible in most of these patients; however, some patients will require open surgery to repair failure of thoracic stent-grafts, especially when recur-

rent failure has occurred. Development of long-term complications after failure of TEVAR is strongly associated with the exclusive environment of the thoracic aorta, thoracic aortic endograft designs, the unique challenges posed by the proximal and distal landing zones, and the hemodynamic forces encountered in the thoracic aorta.



Prof. Piergiorgio Cao



Levosimendan has cardioprotective effects in critically ill patients



Dr. Giovanni Landoni

Critically ill patients often need catecholamines, but these agents could be associated with an increased risk of death and other adverse cardiac events. Levosimendan is a calcium sensitizer which is able to enhance myocardial contractility without increasing myocardial oxygen use.

Dr. Landoni's presentation allowed to summarize the published evidence: data from a total of 3350 patients from 27 randomised controlled studies

suggest a significant reduction in mortality (333/1893 [17.6%] in the levosimendan group vs 326/1457 [22.4%] in the control arm).

Levosimendan has cardioprotective effects that could result in a reduced mortality in critically ill patients.

The sandwich technique: extending EVAR feasibility

"This technique was developed to overcome current anatomical and device constraints, expanding the limits of endovascular aneurysm repair (EVAR) in a safe, easy to perform, and cost-effective manner. The sandwich technique appears a promising tool in the EVAR armamentarium, but more experience with the method is warranted", explains **Professor Lobato**.

Open and/or endovascular techniques have been developed to increase the success of endovascular repair in AAA patients with CIA aneurysms extending to the iliac bifurcation. CIAs with diameters between 18 to 24 mm may be treated using the "bell-bottom" technique. Branched iliac stent-grafts are another appealing alternative to avoid IIA occlusion or complicated surgical procedures. **Prof.**

Lobato reports a new endovascular approach, the sandwich technique, to overcome current anatomical and device constraints, expanding the limits of EVAR in a safe, easy to perform, and cost-effective manner.

Armando C. Lobato

The sandwich technique safely deals with AAAs encumbered by adverse iliac anatomy, including CIA aneurysms that may or not extend to the IIA, isolated CIA/IIA aneurysm, or short CIAs, preserving pelvic flow in a larger number of cases.

The sandwich technique is a new tool to augment EVAR feasibility in the setting of adverse or challenging iliac artery anatomy. Its main advantages include no restrictions in terms of CIA diameter or length or IIA diameter, no need to wait for a specific stent-graft, lower cost, and the easy 5-step method.



Can we limit the risk of spinal cord ischemia in critical patients?

"We know that Spinal cord ischemia is one of the most devastating complications undergoing surgical or endovascular repair of thoracic aorta", explains **Professor Carlo Setacci**. The incidence varies from 2 to 21%. Perioperative risk factors associated to higher risk of Spinal Cord Ischemia after TEVAR are: the length of aortic coverage, hypotension, left subclavian artery coverage and obviously the presence of prior open or endovascular AAA repair. In fact patients who have open or endovascular AAA repair also appear to be prone to such a risk because of the marginal spinal cord collateral blood supply secondary to the ligation or coverage of lumbar arteries performed during the previous procedure.

Prof. Setacci and his group have retrospectively revised their ten year experience in TEVAR, and they identified 21 patients with previous abdominal aortic aneurysm repair. Prophylactic cerebro-spinal fluid drainage was in 100% of their patients. Lumbar drain was placed the day of procedure and was maintained for 2

or 3 days monitoring the intrathecal pressure at a constant level of about 10 mm of mercury. Left subclavian artery was not covered in 16 out of 21 cases. "In case of need of subclavian coverage during TEVAR, we previously performed surgical revascularization in 5 cases, and intraoperative endovascular revascularization by chimney technique in 2 cases.

We saved from coverage as much distal aorta as possible, in particular mean distance from stentgraft to celiac trunk was about 3 cm", says **Prof. Setacci**. Transient paraplegia was only in one patient. Mortality rate was 4.7 % at 30 days (1/21, due to myocardial infarction in a patient who experienced

transient paraplegia secondary to hemodynamic depression in the early post-operative period) Although no randomized controlled trials have evaluated the efficacy of spinal drains in preventing paraplegia in patients undergoing TEVAR, the Authors believe that it is useful in all TEVAR patients with a previous AAA repair. "In conclusion we think that spinal ischemia can be a problem when patients have a previous AAA repair, but we can successfully deal with it if: hypogastrics are patent; we avoid to cover left subclavian artery, or we revascularize it; we limit distal aorta coverage; we avoid both intra- and post-operative hemodynamic depression; and we use prophylactic cerebro-spinal fluid drainage up to 2-3 days after TEVAR", underlines **Prof. Setacci**.

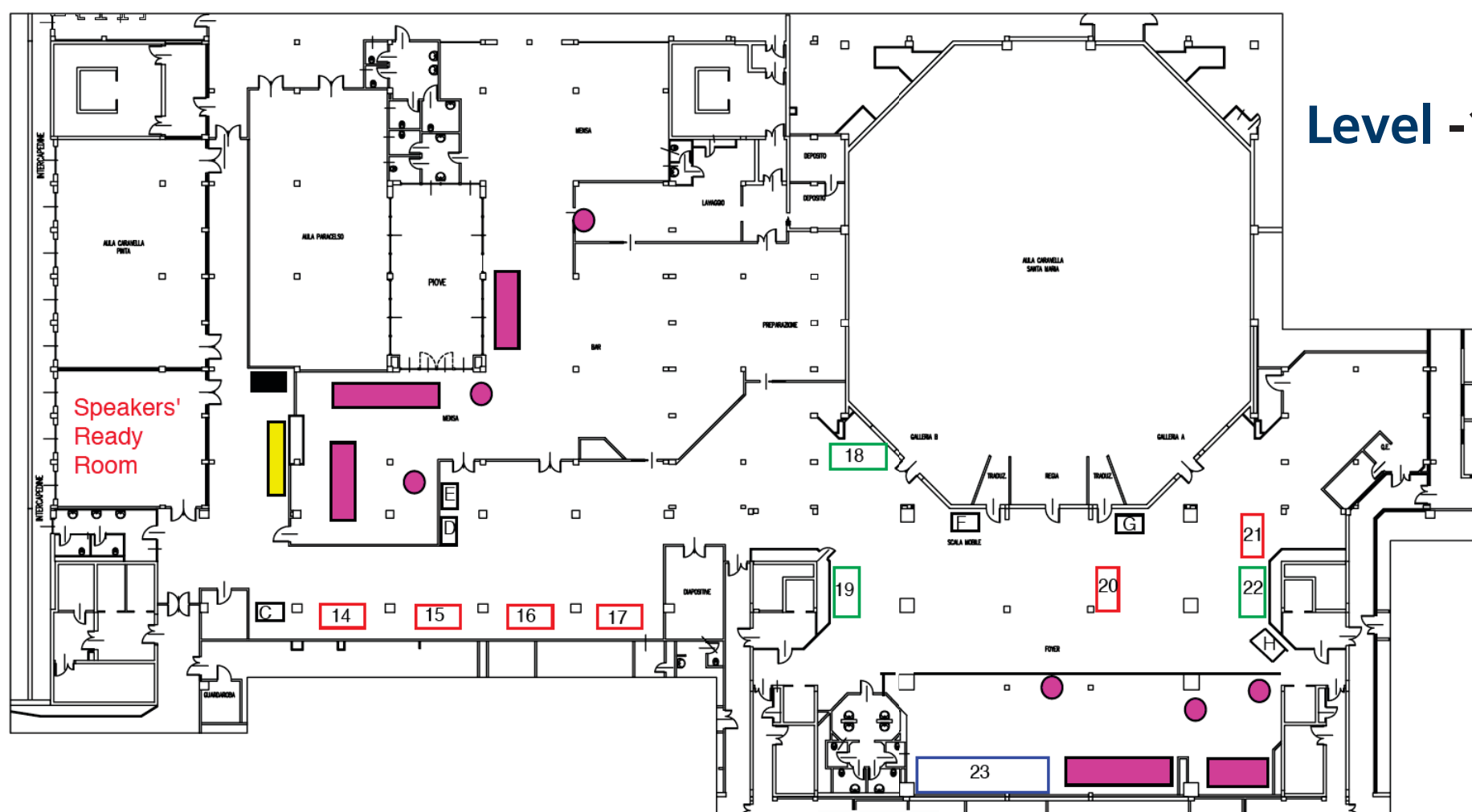


Prof. Carlo Setacci

ACKNOWLEDGMENTS



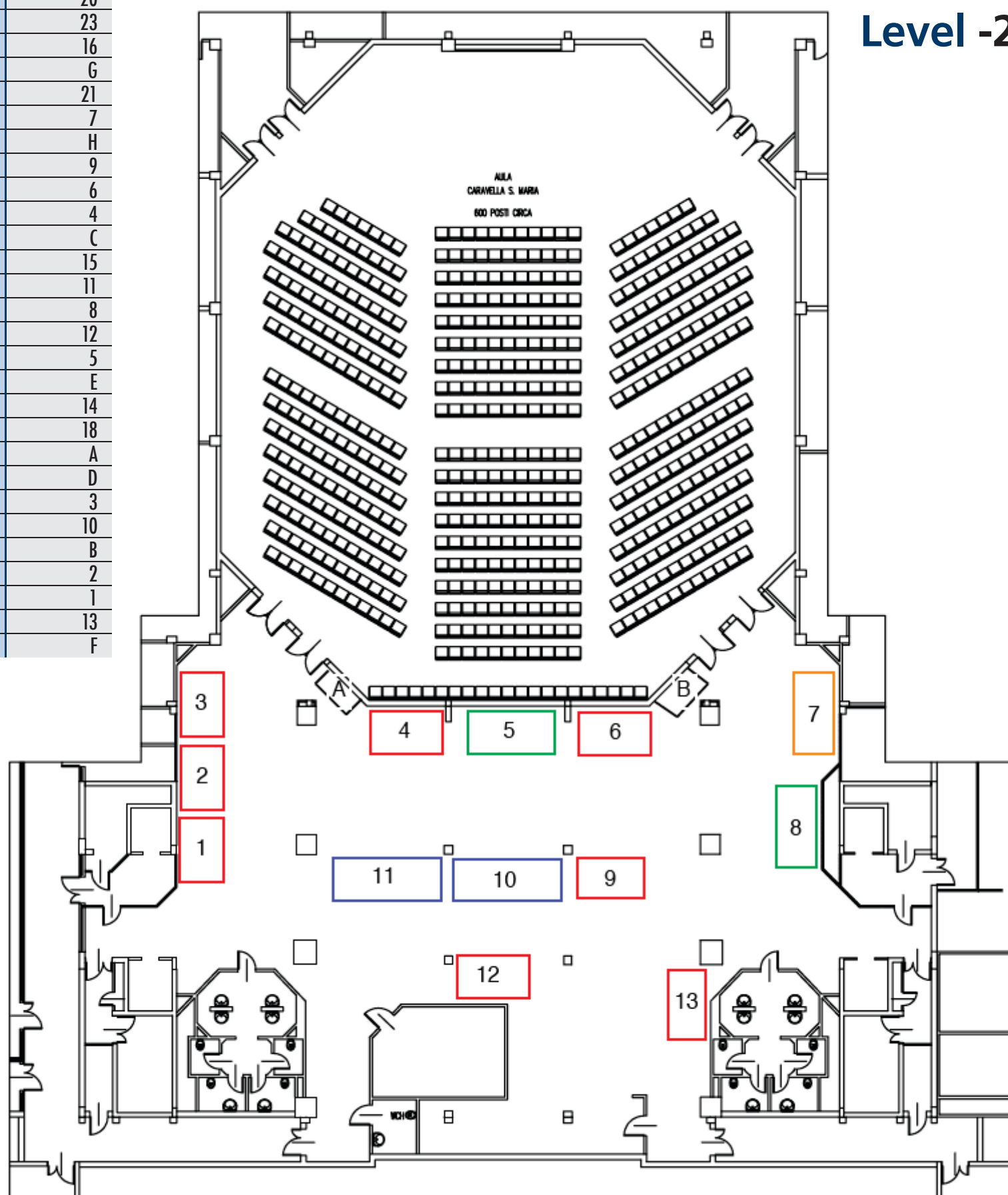
Level -1



	STAND Nr.
AB MEDICA	17
ABBOTT VASCULAR	19
BARD & CROSMED	22
BAXTER SpA	20
BOLTON MEDICAL ITALY	23
BURKE & BURKE	16
CASMED	6
CEA	21
COOK	7
COVIDIEN	H
DRAEGER	9
GORE	6
HARTMANN	4
Hulka	C
INNOVAMEDICA	15
Johson & Johnson + CORDIS	11
JOTEC GmbH	8
MAGNETIC MEDIA	12
MAQUET Internet point	5
MEDCOMP	E
MEDIOLANUM	14
MEDTRONIC INVATEC	18
MINERVA	A
NATURAL BRADEL	D
SEDA SpA	3
SEROM MEDICAL Technology	10
Springer	B
SOLIDEA	2
SORIN GROUP	1
TELEFLEX	13
Trivascular	F

 Catering
 Internet Point

Level -2



Better visualization lowers TAAA surgery's paraplegia risk

Surgical treatment of thoracoabdominal aortic aneurysms is a great challenge for surgeons and patients alike. Unlike aortic disease limited to the thorax, where the introduction of stent grafts has completely changed the therapeutic paradigm with much better results, current endovascular solutions for disease of the thoracoabdominal aorta are still burdened by significant mortality and morbidity. In particular, the rate of paraplegia, one of the most distressing complications, has not dropped greatly in the endovascular era, as was initially hoped, according to **Dr. Melissano**. The etiology of perioperative spinal cord ischemia is multifactorial, and efforts to reduce this complication have included improving surgical technique (through sequential clamping, prevention of steal phenomenon, and intercostal artery reimplantation); adjuncts (the use of distal perfusion, hypothermia, and cerebrospinal fluid drainage); monitoring (using motor-evoked potentials); and anesthesia (such as rapid infusion systems, vital parameters monitoring, arterial pressure

management, and pharmacological strategies), **Dr. Melissano** said. Having accurate preoperative information about the arterial supply to the spinal cord is extremely useful for procedure planning and risk stratification. Recent advances in imaging techniques, especially non invasive techniques, have enabled this information to be obtained for individual patients. "We have reviewed the literature and found that the vascularization of the spinal cord may be visualized in CT scans in many cases, always provided that adequate multiplanar reformatting of the CT dataset is obtainable. Happily, this reformatting may be done using Osirix software -which can be downloaded free of charge from the Internet- on a regular Mac OS X computer [or] even a laptop. This avoids the need for expensive, dedicated radiology workstations", explained **Dr. Melissano**. "By using the CT dataset obtained primarily for diagnosis of the aneurysm, one may also gather useful information on the vascularization of the spinal cord", he added. The improved visualization of the spinal cord vasculature ac-

quired with CT-based angiography offers several important clinical benefits. The keypoints include:

- preoperative risk stratification of spinal cord ischemia
- selective intercostal /lumbar artery reimplantation (open surgery)
- avoidance of unnecessary coverage of intercostal feeders of the arteria radicularis magna (endovascular procedure)
- selective revascularization of the left subclavian artery or hypogastric artery
- selective use of adjuncts that have an intrinsic risk of complications, such as cerebrospinal fluid drainage
- design of specific stent grafts that avoid abrupt blood flow reduction to the intercostal feeders of the arteria radicularis magna

Use of these various techniques



Dr. Germano Melissano

with proper knowledge of spinal cord vasculature may be the best way to combat the risk of paraplegia in treating thoracoabdominal aortic aneurysm, **Dr. Melissano** concluded.

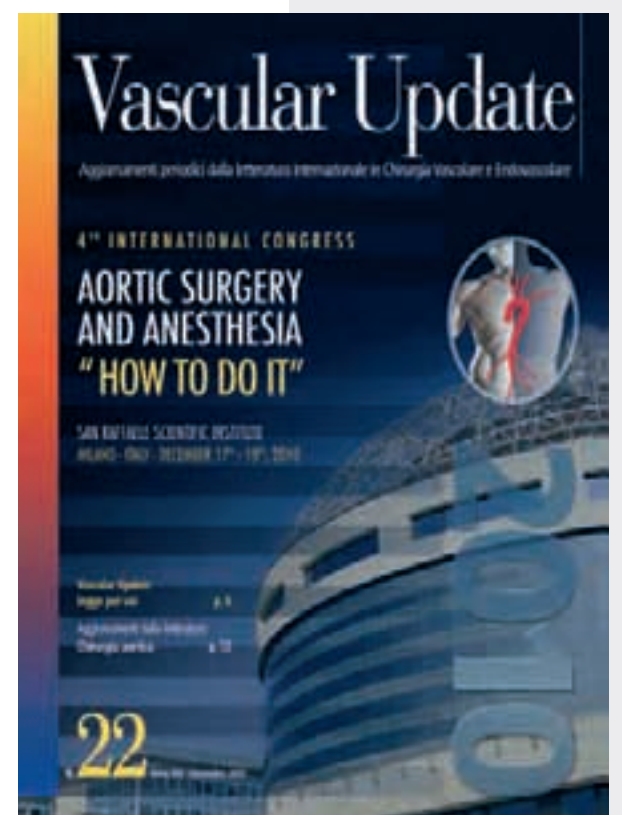
This book is offered to the participants of the Congress

Germano Melissano - Efrem Civilini - Luca Bertoglio

PLANNING & SIZING
DELLA PATOLOGIA AORTICA CON OSIRIX



Presentazione del Prof. Roberto Chiesa



Motor evoked potential during TAAA open repair

"Replacing the thoracic and abdominal aorta with a tube graft can cause paraplegia, which is the most devastating complication of this surgery. Being incontinent, being doomed to a wheelchair and have no feeling in your lower body and legs is really the worst scenario a patient can experience", explains **Professor Michael Jacobs**.

What is the importance of our work?

During the operation it would be of utmost importance to know whether the spinal cord is functioning adequately or not. If the function of the spinal cord becomes endangered, rapid surgical or hemodynamic interventions have to be undertaken in order to prevent spinal cord damage. Monitoring motor evoked potentials is a reliable technique to assess the function of the spinal cord. It can be considered as monitor to evaluate the spinal cord function on-line. As soon as the signals disappear; spinal cord is in trouble and acute intervention is required. This can include elevation of distal aortic and mean arterial pressure, revascularization of segmental arteries and preserving flow to the internal iliac arteries.

Without this on-line information,

one only discovers the function of the spinal cord after the patient wakes up. If paraplegia developed it is too late.

In summary, monitoring motor evoked potentials is a navigation system to land the plane safe and secure.

How might attending the presentation influence others?

Well, spinal cord ischemia and subsequent paraplegia is a nightmare: for the patient but also for the surgeon. Any technique to decrease its incidence is probably welcomed by all surgeons dealing with these procedures.

We have now started this technique of monitoring in 4 centers: Maastricht (Netherlands), Aachen in Hamburg in Germany and Bern in Switzerland. The same experiences of reduced paraplegia have now been confirmed and therefore the message is that this kind of neuromonitoring can avoid significant numbers of catastrophes.

What is the overall take-home message?

The take home message is that monitoring spinal cord function during TAAA repair is highly sensitive and reliable. The technique can



Prof. Michael Jacobs

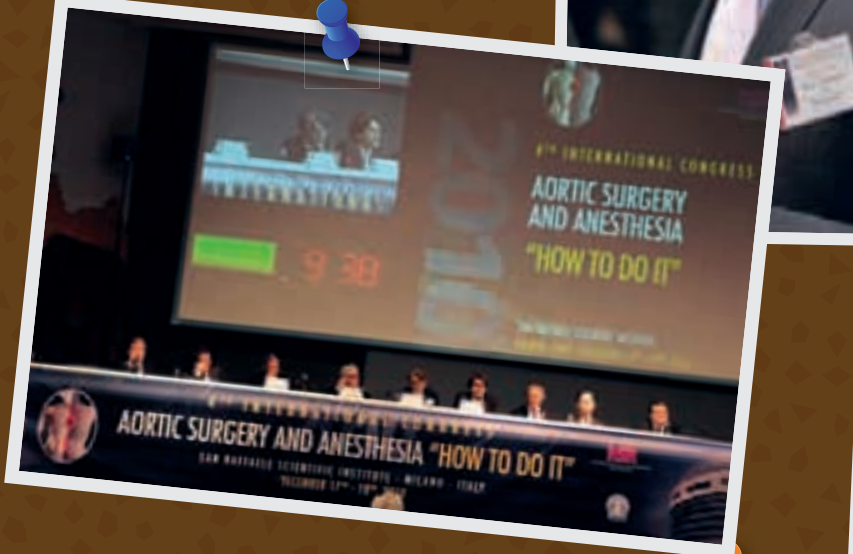
be learned by any motivated team and should be included in the surgical protocol of TAAA repair.

What can we offer?

In Maastricht we have our central monitoring station to which Aachen, Hamburg and Bern are connected. The patient are oper-

ated in these centers but the assessment and judgment of the motor evoked potentials is done centrally in Maastricht. This approach saves money and concentrates expertise. Any large volume center performing TAAA procedures is welcome to hook up with our center.

Friday,
December 17th,
2010



New data and perspectives in the management of AEF and ABF

Aorto-esophageal (AEF) and aortobronchial (ABF) fistulae represent an uncommon but highly lethal group of pathologies. In the last 50 years, the only choice of treatment has been emergent open surgical repair of the thoracic aorta associated with esophageal or tracheobronchial reconstruction, resulting in prohibitive mortality rates. In the more recent "endovascular era", thoracic endovascular aortic repair (TEVAR) has been proposed as an alternative strategy to surgical management of primary and secondary fistulae. Although less invasive, this technique presents important limitations in treating AEF and ABF, mainly the high risk of graft contamination. Also, with growing numbers of interventional thoracic aortic procedures and increasing follow-up periods, late complications of TEVAR have become increasingly evident over time, including secondary AEF and ABF. **Dr. Marone** presented the results of a national survey, involving 17 Italian departments of vascular surgery or cardiothoracic surgery, which studied AEF and ABF treated with TEVAR or developed following TEVAR.

Dr. Marone thinks that this research is of valuable importance, since relatively little is known about these pathologies because of their rarity, the fairly recent clinical introduction of endovascular techniques, and the lack of multicenter reports. Its results showed that, although AEF and ABF are believed to be extremely uncommon, these pathologies were the indication in 2.2% of all TEVAR procedures performed in the last 10 years, and centers that regularly perform thoracic aortic surgery usually have to deal with these complex pathologies. Also, AEF and ABF represent a

not negligible late complication of TEVAR, particularly in patients submitted to emergent and complicated procedures. Furthermore, the survey showed that conservative management of AEF / ABF resulted invariably in patient's death, and that open surgical repair was associated with high mortality rates. TEVAR proved to have a predominant role in controlling the massive hemorrhage associated with AEF and ABF in the usual setting of sepsis and medical comorbidities. In cases of minimal local infection or patients who are overtly moribund, further treatment may be unnecessary. In the other cases, a definitive esophageal or bronchial repair is indicated after stabilization.



Dr. Enrico M. Marone



Perioperative Beta-blockers and Statins



Prof. Philip J. Devereaux



Myocardial infarction is the most common major perioperative vascular complication after noncardiac surgery. Most patients suffering a perioperative myocardial infarction will not experience ischemic symptoms. Data demonstrates that routine monitoring of troponin levels after surgery are needed to detect the majority of perioperative myocardial infarctions, which have an equally poor prognosis whether symptomatic or asymptomatic. "Patients suffering a perioperative myocardial infarction have substantial risk of serious cardiovascular events and short-term mortality. Randomized trials are urgently needed to establish effective treatments for perioperative myocardial infarction", states **Professor Devereaux**. During the last few decades, substantial advances in noncardiac surgery have improved disease treatment and patients' quality of life. As a result, the number of patients undergoing noncardiac surgery is growing.

A recent study that used surgical data from 56 countries suggests that over 200 million major noncardiac surgical procedures are undertaken annually around the world. Millions of these patients will suffer a major vascular complication (i.e., vascular death, nonfatal myocardial infarction, nonfatal cardiac arrest, or nonfatal stroke) within 30 days after surgery. Many authors have recommended a perioperative beta-blocker and statin to prevent major vascular complications around the time of noncardiac surgery. The perioperative beta-blocker data clearly shows a reduction in perioperative myocardial infarction with beta-blockade but unfortunately there is an excess of serious strokes a probably an excess in mortality. **Prof. Devereaux** reviewed the evidence related to this perioperative intervention. The perioperative statin data is encouraging that it may prevent major perioperative vascular complications but there is a paucity of large RCTs addressing this issue. Further trials are needed.

Marfan syndrome poses significant technical challenges to surgeons

The heritable aortopathy represent about 20% of all diseases of the thoracic aorta and are summarized in syndromic and non-syndromic forms, among which the most important are represented by the Marfan and Loeys-Dietz syndrome. Diagnosis is based on a specific set of criteria that take into account all potentially involved systems, typically involving the cardiovascular, skeletal and ocular systems. Patients with this syndrome present with aortic dissection at a young age and with aortic diameters less than 5 cm. The natural history of the disorder differs considerably from that of other connective tissue disorders, with a median survival of patients with Loeys-Dietz syndrome of 37 years.

The main objective in these patients is to prevent the dilation of the aortic root that could lead to rupture or dissection of the aorta. All patients who can tolerate beta-blockade should be treated, regardless of the presence or absence of aortic dilatation. When medical therapy is not sufficient to slow the dilation of the aortic root, it will be necessary to change with or without surgical reimplantation of the aortic valve. However, in relation to improving the survival of these patients, there are a growing number of patients who might require secondary aortic operations as a result of new or residual dissections, increasing diameter, or new aneurysms. In particular, the indications for surgical treatment of descending thoracic and thoracoabdominal aorta are much more restrictive than atherosclerotic aneurysms. Therefore, it will be shown also treated aortas with a diameter less than 5 cm in patients with Loeys-Dietz syndrome. Conversely, the indications for the treatment of acute type

B aortic dissections is still based on the observations of Borst.

We face many technical challenges in the treatment of these patients leading to increased mortality and morbidity. The presence of pectus excavatum or carinatum, causes an increase in the risk of perioperative respiratory failure and deterioration of intraoperative hemodynamics. The extreme fragility of this tissue aortas requires the use of intraoperative techniques to make it resistant to the anastomosis, as the use of Teflon felt or haemostatic substances. Is necessary reduce the residual aortic tissue and create tension-free anastomoses, especially when reattaching intercostal and visceral or renal arteries, using separate branch grafts. Is also important to a proper study of preoperative artery Adamkiewicz for the possibility of frequent anomalies of origin.

Professor Attilio Otero describes his experience on

316 surgically treated thoracic aortic aneurysms: "we observed a perioperative elective mortality and paraplegia rate of 6.7% for thoraco-abdominal aneurysms, and 4.5% and 2.3%, respectively, for descending thoracic aneurysms. Whereas, in the last two years we treated 11 patients with Marfan or Loeys-Dietz syndrome, with a mortality 9% and a paraplegia rate of 9%".

The current data for TEVAR in the treatment

of aortic disease in Marfan patients is limited. Experience is confined to small series in heterogeneous groups of patients in which the follow-up period is relatively short. In relation to the few data and the extreme fragility of the thoracic aorta, is hardly recommended to install an additional radial force on the aortic wall through the stentgraft. Indeed, thoracic aorta distal of the stentgraft resulted in a substantial diameter increase in several patients leaving these segments an area of great concern.



Prof. Attilio Otero



Type II Endoleak: Treat or Observe?

The management of type II endoleak remains a highly debated issue in endovascular treatment of abdominal aortic aneurysms because of the lack of explicit guidelines, diverging personal experiences and perspectives. Type II endoleak occurs from 6 to 30% of EVARs, explains **Prof. Biasi**, professor of vascular surgery at S. Gerardo Teaching Hospital in Monza, Italy. In the same variable way, endoleaks are reported to resolve from 5% to 53% at 6 months, otherwise a persistent endoleak is diagnosed. There is evidence that persistent endoleaks are associated with adverse outcomes, such as aneurysmal sac growth, an increased risk of rupture and conversion to open repair, while the EURO-

STAR trial did not show the same scenario. Because of this, some investigators recommend aggressive treatment of type II endoleaks that persist for 6 months or longer; others limit treatment to those associat-

ed with growth of the aneurysmal sac, while others tend to combine sac growth (> 5mm) and 6 months persistence in order to intervene. Even when a persistent endoleak is treated, several approaches are available, with wide success rates



Prof. Giorgio M. Biasi



between the techniques: transarterial chemical or coil embolization techniques, as well as translumbar sac embolization have been proposed. Laparoscopic or open ligation of feeding vessels

have also been advocated as potential options. Several authors compared transarterial coil embolization with translumbar embolization, with 80% failure for the transarterial group but 92% success for the translumbar. The

number of techniques and varying success rates of reintervention reflects the difficulty of treating type II endoleaks after EVAR. Here comes the dilemma: should we watch and wait or act with no hesitation? Does type II endoleak depend on different factors such as technical variability within endografts, or the number of patent collateral arteries? According to **Prof. Biasi**, it is reasonable to intervene in cases of increasing aneurysm size or if the endoleak does not resolve spontaneously within one year. Many different methods have been proposed for the prevention and treatment of type II endoleaks, and currently there is no consensus for their management.



5TH INTERNATIONAL CONGRESS

AORTIC SURGERY
AND ANESTHESIA

"HOW TO DO IT"



2012



Visit us on:
facebook®