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Oncoplastic Breast Conserving Surgery

Prof Kovacs: Thank you very much and thank you very much, Professor Rainsbury, for chairing this session, which is going to discuss about breast surgical oncology, oncoplastic and what the future might bring to us. I just wanted to remind you that you can ask questions at any time and we are more than happy to take questions at the end too. A timeline of breast cancer surgery. As you can see on this slide. in the last more than 100 years, breast surgery has significantly changed and nowadays, we do less extensive surgery, since the 2000s nipple sparing mastectomy has been well established for breast cancer and nowadays, we are even thinking of giving up surgery in patients who developed a pathological complete response and we just biopsy the cavity without perhaps doing surgery. But of course, this is still in progress and we hope that this will happen later on. Surgical oncology and breast cancer surgery have significantly changed and Professor Veronesi, who is a founder of ESO, in his work published in 2012 already said, and he was talking about cancer surgery, focusing more on preservation of anatomy functionality and also, improvement of quality of life. Surgery will be transformed over the next few decades. And this is a document published a few years back by the Royal College of Surgeons, talking about the fact that new findings and innovations have significantly transformed how the clinical care is delivered and there are certain areas which they will have an impact on how cancer surgery and the general surgery is going to be performed. Certain technologies which will make greater impact, also the future will change for patients and also, how the delivery of surgical care will be changed in the future. So, what is what the future will bring for patients? Surgery will potentially focus more on prevention, as I said before, not just on treatment. Surgery gradually will become less invasive and more precise and it will create lower risk to harm. It is likely that surgery will increasingly focus on improving quality of life and operating on people with the aim of prevention. Going back to the oncoplastic surgery. It is clear nowadays that oncoplastic surgery is a well-recognised set of skills and we would be able to say that kind of it became a standard of care nowadays. However, we have to be aware that it seems to be that in the most recent years, there is kind of perhaps a little bit of overdoing of oncoplastic surgery and quite often extensive oncoplastic procedures are used for patients and for cases where maybe just standard breast conservation or maximum level-1 techniques are same as useful as more complex procedures are. In the British Association of Breast Surgeons, guide to good practise for oncoplastic breast surgery, careful patient selection for the most appropriate techniques has to be considered in order to minimise complications and also, to ensure low rates of local recurrence. This is their guidance. They also advise us that we should always consider, from the very beginning of planning cancer surgery, the options for oncoplastic, in order to improve aesthetic outcomes, not only to make sure that oncologically the procedures are safe and with a low recurrence rate. A panel of experts using the grade approach for the development of clinical recommendations had a look into whether oncoplastic breast surgery should be recommended versus a standard breast conservation and the opinion of the panel members, 36% of the panel members strongly supported that oncoplastic surgery should be kind of an option or offered to patients who require breast cancer surgery. Of course, the

extensiveness of oncoplastic has to be judged on a case-based discussion. Different national societies are already recommending as a standard of care the introduction of oncoplastic procedures, especially, when you have to remove at least 20% of the volume of the breast, and also, other situations such as patients with breast hypertrophy, ptosis, or with the tumour located primarily in the medial upper quadrant or lower half of the breast. And again, guidance of which procedure should be used are found in these guidelines. Again, a reminder just if you want to ask any questions or if you want to discuss any matters, we are more than happy to do that.

Prof Rainsbury: Tibor, if I could just butt in at this stage and thank you so much for being here tonight. Just perhaps while some of the participants are thinking of their questions, I could just ask you, maybe, what your own personal indications for considering oncoplastic surgery are? I mean, guidelines are very useful, but they tend to give the recommendations depending on which ones... what you are reading. So, what are your own personal recommendations or indications for oncoplastic conservation?

Prof Kovacs: So, my personal, what I would do if I have a recently diagnosed patient with breast cancer, I would first of all look at the imaging, look at the breast, examine the patient and then, I try to put together a surgical plan. Of course, I would also involve my colleagues from the MDT whether there is any reason to change the order of the surgery and perhaps offer neoadjuvant treatment to the patient in order to reduce later on the extensiveness of the surgery. So, I would try to use perhaps other methods to reduce the extensiveness of the surgery and then, if there is no other way and if the breast tumour to breast volume ratio kind of leads in the direction of having a larger tumour in a small size breast or perhaps multifocal two separate cancers and a larger breast, I would consider different techniques. But my approach would be to try to do less extensive procedure, if that would lead to the same as good aesthetic outcome and of course, oncological outcome and as a more extensive therapeutic mammoplasty.

Prof Rainsbury: Yeah.

Prof Kovacs: And the other issue, what I always consider and I discuss with the patient, is what is exactly what they would like to achieve from this procedure. Whether they want a very quick recovery, without... they are not concerned about the aesthetics, then I would not push probably too much for very complex.

Prof Rainsbury: Thank you, Tibor, very good points. Minimise the surgery unless it's really necessary. So, less is more if you like. Sorry, would you like to continue, please?

Prof Kovacs: Yes, thank you very much. Again, another, I mean, we talked about guidelines, but I still have to mention to you because I think this shows kind of how standard of care became oncoplastic and it is included in the training of the modern breast cancer surgeon, the BRESO, ESO, theoretical and practise knowledge curriculum for European breast surgeons already included in the training recommendations of breast surgeons a certain level of oncoplastic training. And again, this changing practise of British breast and plastic surgeons, which was evaluated by a questionnaire-based survey, it shows that proportionally more therapeutic mammoplasties are performed nowadays in the UK by breast surgeons and there is an increased interest amongst breast surgeons to develop these skills. And at least half of breast and plastic surgeons also felt that oncoplastic surgery should be available as a standard of care for all women who face this problem. This graph just shows the gradual increase of oncoplastic breast conservation in the UK in the last 10 years, up to 2018. And I show you where the document comes from. Again, immediate reconstruction rate in different age groups is on increase. And also, I want to... this is the document where the previous slides come from. It is the national programme in the UK, which is a data-led review of outcomes and costs with a real insight into patient experiences, the so-called Getting It Right First Time project. And this was led by Dr. Fiona MacNeill from Royal Marsden and what their conclusions and summary is that we, as breast surgeons and leaders of the breast cancer surgical care, we should ensure that equity of access to oncoplastic surgery is given to all breast cancer surgeons by offering safe breast conservation and also, equity of access to breast reconstruction, in order to reduce variation in immediate reconstruction rates and to utilise as many free

flaps as possible for reconstruction. Again, the last sentence is important. We should ensure that no patients undergo more surgery than is necessary. Other countries face the same issues. There is not a lot of oncoplastic approach used in lots of centres. For example, this study from China shows that in 110 centres there is a tendency towards oncoplastic surgery used more likely in academic hospitals, volume displacement techniques are more often, however, only 33% of centres used oncoplastic surgery in more than 50% of their cases. What about the oncological safety? Several studies, however, none of them are randomised control studies, but they are large number of studies, which they showed that there is no statistically significant difference in the overall survival and disease survival between the oncoplastic and traditional breast conservation. This is a study from the Milano Cancer Institute, where, as you can see, the re-excision rate is much lower in the oncoplastic group and they had also a relatively long follow-up of 7.2 years. These are the graphs for disease free and overall survival in comparison between traditional and oncoplastic breast conservation. Another study from The Royal Marsden, no, sorry, it's Scotland, apologies. Where they compared tumours with the same feature, different procedures done, oncoplastic conservation, simple wide local excision or a mastectomy and the local recurrence rates were matching but relatively similar, showing that maybe oncoplastic breast conservation could be an alternative option in preserving the breast as long as the recurrence rates are quite similar. Another study from the National Cancer Institute from Hungary, again, a retrospective single centre, comparative study between oncoplastic and conventional breast conservation showing that oncoplastic breast conservation had significantly higher score for aesthetic outcomes and satisfaction, similar recurrence rates, the excision weight was higher in the oncoplastic group. They also mentioned that oncoplastic surgery needs longer operating time, therefore surgical planning, theatre planning is something which we always have to consider. At the same time, these procedures can reduce, can lead to the reduction of re-excision rates. Another large study showing and analysing, a meta-analysis of 18.000 patients comparing the safety of oncoplastic and traditional breast conservation, showed that the recurrence rates were similar and also, the re-operation rates were not significantly different. Therefore, these procedures are comparable with the traditional breast conservation. Again, if you have any questions or if you would like to comment.

Prof Rainsbury: We don't have picked out any questions from the participants yet. But just a very quick one, Tibor. I think one or two of the slides you showed this increased rate of immediate reconstruction and we know that nearly all of that is implant-based. Do you think we should be offering more choice, in terms of the type of reconstruction, you referred to the GIRFT study, showing the free flap comment that this should be available. What's your view on this?

Prof Kovacs: So, I'm a little bit biased, because I've spent 17 years in the UK and I learned that no matter whether my department can offer or not a flap-based reconstruction, we should always offer it to patients and then, make sure that the patient can get to that centre where the appropriate or patient's choice reconstruction can happen. However, of course, it's not always possible. The health services are very different in different countries. As long as the procedures are technically available and reachable, I believe that the decision should be based on an open discussion. Sometimes, patients are suitable for several, different techniques, implant, one-stage, two-stage or flap-based reconstructions, pedicle or microvascular. And of course, there are certain treatment-related elements which you would've to consider, for example, radiotherapy, which has an impact on implant-based reconstructions.

Prof Rainsbury: These are all good points Tibor, and I have a question here from Marina who is asking, would you consider oncoplastic surgery in a multifocal breast cancer?

Prof Kovacs: Yes, definitely. I would consider, and again, of course, it depends on the breast size, also where the tumours are located. And my criteria would be as long as both lesions can be removed with clear surgical resection margins. And as long as there is a technique which we can use in order to rebuild the breast and to offer good shape, good aesthetic look to the breast, I'm fine with that. Of course, you have to keep in mind that both, surgical resection margins, for both tumours have to be clear.

Prof Rainsbury: Sure.

Prof Kovacs: And also, to achieve good aesthetic outcomes, otherwise it's pointless to conserve the breast.

Prof Rainsbury: Thanks very much. No more questions.

Prof Kovacs: Yes, thank you. So, we just go further and again, the Oncoplastic Breast Consortium, which is a European organisation, has done a study about establishing certain knowledge gaps in oncoplastic breast surgery. And it seems to be that we still not have enough data about the effect of oncoplastic breast conservation on quality of life. Whether oncoplastic conservation, besides improving the aesthetic outcomes of the breast conservation itself, does it lead to an increased or better quality of life? And this is what perhaps we should focus more because this is the most important for our patients. They want a better quality of life, besides the longer survival. Over surgeries, breast cancer, as we spoke before, we, as surgeons, have a significant role in minimising breast cancer surgery and there are certain ways how we can achieve this, to use multi-modality treatment facilities, to use primary systemic therapy as often as it is reasonable and recommended based on different histological and immunological subtypes. So, breast cancer, to use neoadjuvant chemo or endocrine treatment as a surgical tool, to facilitate more breast conservation and also, to try to limit the need for mastectomy, perhaps also to carefully think what kind of imaging modalities we use, because we know that, for example, an over-usage MR scans can also increase the mastectomy rates. How can we improve aesthetics without surgery? First of all, doing an ultrasound guided or guided surgery, intraoperative guidance can be very helpful, and the CoBalT randomised control trial have showed and compared a group of ultrasound-guided patients with palpation-guided surgery. They've had a look into cosmetic outcomes, based on BCCT.core, also the panel and self-evaluation and the quality-of-life questionnaire. And what they found is that those patients who had the ultrasound-guided excision of the breast cancer, breast lump, had a significant reduced margin involvement, a significantly reduced specimen volume. So, less breast tissue has been removed from the breast, therefore, less need for reconstruct or remodel the breast and also, a better cosmetic outcome in the ultrasound-guided group. And the locoregional recurrence was very similar in the two groups. So, no difference mainly. The significant difference in overall cosmetic outcome and the patient satisfaction was in favour of the ultrasound-guided group, at an evaluation after three years.

Prof Rainsbury: We have a question. A very good question here, Tibor, and it's from Meriem Zerroug. How do you help with the radiation therapy boost guidance? Do you place your clips in the original tumour bed?

Prof Kovacs: Yes, so this is a very good point and I think I will have just one slide later on about this, that we always have to make sure, especially with oncoplastic procedures, that our radiotherapy colleagues will know exactly what we have done. And one of the ways, which is kind of mandatory, to mark your tumour bed or tumour cavity with metal clips in order to exactly identify the cavity. And this has to be done in a manner that mainly you have to mark the tissue from where the tumour was removed before you start the remodelling. Because if you don't do it this way, then actually, you will not mark the real cavity walls. I don't know if you have any comments on that, because doing a therapeutic mammoplasty of breast reduction, type of level-two procedure, quite often the tumour cavity walls are situated in different parts of the breast.

Prof Rainsbury: Yes, this is a real issue, Tibor, we discuss it frequently at the MDM, because if you put clips on the margins and then get on and reconstruct the breasts, once you've done your therapeutic mammoplasty resection, the clips afterwards end up all over the place. And I don't think there's any good answer. You can mark the tumour bed, because that stays the same on the pectoral fascia, but the rest of it tends to move around the place. One way we got round this is by removing the tumour, giving intraoperative radiotherapy with intra-beam and then, deconstructing and reconstructing the breast, so, you know that the actual margins have been irradiated and they may end up somewhere different, but they've been irradiated. But not everyone has got the benefit of being able to do that.

Prof Kovacs: Yeah.

Prof Rainsbury: Shall we move on? I have no more questions at the moment.

Prof Kovacs: Thank you. So, we should have a kind of systematic organised approach to oncoplastic breast surgery and we have to plan it from the very beginning, when we see first the patients, we have the diagnosis and we have the imaging. And in order to choose the optimal approach, for each individual patient, we have ways to choose different procedures. There are more and more standardised classification systems, algorithms available, which they help the young surgeons to try to choose gradually the less complicated going towards the more complicated procedures for breast remodelling. And key factors for the technique selection are basically excision volume, tumour location, also glandular density. And always is advised for the surgeons to have a discussion about surgery with their patients in advance and to try to choose the simplest procedure that gives the least scarring and the most acceptable results. And this drawing mainly shows us this study showed and helps, with a kind of objective decision making between conventional and oncoplastic breast conservation surgery based on quadrants, showing that patients who have tumours located in the upper inner, lower inner quadrant, they are most susceptible. So poorer aesthetic outcomes, if we do not do anything and we just remove the tumour itself. The most forgiving is the upper outer quadrant, where you can excise up to around 20% of the breast volume without causing major damage. So, based on quadrants, of course, you already could have a thinking on what procedure to choose. And again, the role of neoadjuvant chemotherapy is extremely important for breast conservation and also, for in order to reduce the extensiveness of disease. This study showed and gives a kind of guidance on different working, we call them working packages on how do we assess the breast post-neoadjuvant chemotherapy, how do we assess the tumour response? Also, how do we plan the surgery? How do we do the pre-operative planning and marking intraoperative localization techniques, in order to reduce the extensiveness of excision volumes, after neoadjuvant chemotherapy? And we should always plan our surgery based on the post-neoadjuvant treatment imaging, MR scan usually instead of using the original imaging for deciding about how extensive surgery should be. Factors influencing aesthetic outcomes that have a kind of detrimental effect on the cosmetic outcomes of breast cancer surgery, is a smaller size breast, more ptotic breast shape, larger tumour size, tumour location, in the central, upper-inner, lower-inner quadrants of the breast. Again, multifocality is very important and the excision volume over 20%. Technique selection cannot be also based and one of the useful tools are the breast density scoring. Those patients who they have more fatty breasts, the type A, type B breasts, they are more suitable for the more complicated, complex resectional surgeries, where you would do a level-two oncoplastic surgery. So called therapeutic mammoplasty, reduction mammoplasty. This is also related to the fact that you would want to avoid extensive devascularization of the fatty breast, which can lead to fat necrosis in these procedures with a reduction of the breast volume, you would avoid these complications. And then, for the type C and D breast, the more dense, breast level-one procedures are more suitable because these breasts tolerate better the dual plain undermining usually when you do level-one techniques. Another algorithm which helps in the decision making, what, when and whom, from the Nottingham group, where you can have a look into the percentage of volume size. Also, the volume of the breast, the bra size, the tumour diameter in centimetres, and as you can see, if we have a large tumour of four five centimetres in a larger bra size and larger breast volume, where you have to excise again a larger part of the breast, you would end up somewhere in this upper right quadrant, where the more extensive level-two procedures, therapeutic reduction mammoplasties are recommended, it's a rather simplistic approach but I think it gives a little bit of guidance and thinking. As I said, location, volume and the type, the shape of the breast can lead to a choice of the ideal or perhaps the best technique. And if for different quadrants, different parts of the breast, you have different complexity procedures, as you can see, this French algorithm, from a French team shows how different procedures could be used in different types of breast, in different parts of the breast, and perhaps, it can help guiding through the surgeon and also, in the discussions with the patients, how complex the procedure should be, based on what we want to achieve as a result.

Again, just another variety or option for an algorithm, how to choose the right technique, considering the breast ptosis, tumour size and location and also, breast size. Any questions or any comments?

Prof Rainsbury: None on the Q&A, Tibor. But just one question from me and you've shown a lot of different options for validated tools that assess the likelihood and need for oncoplastic breast conservation. But do you actually have a personal preference, in the ones that you've shown?

Prof Kovacs: Personal preference, you mean which of the algorithms to use?

Prof Rainsbury: Yeah, the Nottingham, for example, I think we use the Nottingham one. We find it quite simple and, as you say, it is simplistic but it's very helpful when you're [Audio Not Clear] out.

Prof Kovacs: Yeah, so, to be honest, I really like that one and I think that's a very basic guidance, which really directs the surgeon into a direction, what should they think. So, if you have a large breast, large tumour or multifocal tumour, of course you start to think about a more complex procedure, instead of just excising something and then you end up with a very distorted breast. So, now for which quadrant, what procedure to choose, I think, nowadays... so, at the beginning, when I started to learn this, I was always thinking, of course, oh I want to do a beautiful, amazing complex procedure. It was more a surgical ambition. Nowadays, I kind of start to think about, what is the simplest way, perhaps a round block or a crescent mammoplasty or peri-areolar approach, which can lead to same as good aesthetic results as something which is more complex, higher risk and leading to more complications.

Prof Rainsbury: It's a very good point. Thank you very much, Tibor.

Prof Kovacs: So, this is about exactly what we are talking about. De-escalation of complexity of oncoplastic breast surgery. And this Italian group, they've had a look into how different decision support systems can assist the surgeon, together with the patient, for the final so-called shared decision making. And they believe and they can prove that in their study, that proper information provided to the patients may have an impact on how patients will make a decision, what exactly they want from us as an output from their surgery. And this might help in reduction of the complexity of the surgery, without having main impact on the surgical outcomes. So, pending on whether a patient would like to have perfect breasts or whether they want to avoid radiotherapy, or whether they want to avoid the risk of asymmetry. So, based on patient's wishes and patient's choices, the surgeon can help to choose the best procedure which can achieve that wish of the patient too. Provided, of course, that all these things, will lead to oncologically safe and aesthetically good outcomes. And I just wanted to highlight a few ways how surgeons can train themselves. We are still based or we still base a lot of effort on a model-based training and we believe that these model-based courses, training sessions are extremely useful. Of course, live operating or showing live surgery is also something which is reasonable, however is less time-efficient and it does not offer that much practical training. Silicon models and for the young surgeons to perform these procedures on models is extremely helpful. This is what the feedback we got from a participant in these courses. More and more effort is laid onto developing virtual breast oncoplastic surgery simulators, as a novel training tool in breast cancer surgery. And besides this also augmented reality, with building 3D digital breast models, is the way forward in order to localise tumours. So, perhaps, also for surgical planning, but also for teaching and demonstrating complex oncoplastic procedures. There is a lot of potential in this and, for example, this group from Institute Champalimaud, from Portugal, Lisbon, they do quite a lot of work in using 3D breast models and virtual reality, augmented reality in order to demonstrate this. Key points for today is mainly about a few things, that I wanted to mention. We always have to consider that the surgery should take into account the importance of breast to each women's identity. The evidence indicates nowadays that oncoplastic breast conservation surgery is oncologically safe. Techniques are volume replacement and volume displacement techniques. The types of techniques used need to be determined by the site of the tumour, by the extent of resection, size of the breast and also, patient's personal preference, as I highlighted before. And of course, at the end, it must be performed only by adequately trained surgeons. And what do I mean about this? Of course, the training is very different and

different countries have different training systems and not everybody's lucky to have a perhaps... to attend a one-year fellowship in oncoplastic. However, there is a certain level where a breast surgeon, even without a fellowship, they can achieve and they can train themselves, by attending different workshops, courses or even to attend surgeries of oncoplastic breast surgeons in order to kind of increase the variety of procedures, what they can offer. And with this, I would like to thank you very much for your attention and we are happy to take more questions and I think we still have time for discussion, few minutes.

Prof Rainsbury: Thank you very much indeed, Tibor. And that's a really informative, thought-provoking presentation and I have to say I completely agree with the key messages that you had on that slide at the end. We do have time as you say for questions. There's another one here from Hagigat Valiyeva, who is asking what is the acceptable duration of surgery, for an oncoplastic procedure in large breasts? Is there a time limit that you would, you know, draw a line and say that we can't go on beyond that? What kind of, well, she makes a very good point, that actually if you are going to embark on providing a service, you're going to have to persuade your clinic, your operating theatre manager to allow you extra time, because these things take longer than standard breast conserving surgery and a list that would normally take two and a half, or three hours may take four or five hours. What do you think about that?

Prof Kovacs: So, that's a very good point and it has to be included in the surgical planning, of course, and resources. I don't think that there is an acceptable time. It's kind of what procedure you do. In a large breast, you can do a simple wide local excision, probably on half an hour, 40 minutes or an hour time. But if you do for the same tumour, same breast an inferior pedicle reduction mammoplasty, that will take, I don't know, two hours, two and a half hours. Especially, if you want to do the symmetrisation at the same time, in the same session, you might end up with even longer surgery. So, it depends mainly how flexible the working place is. How pressurised is that department or theatre space is. Whether you work in private, whether you work on a national health service. Also, for example, in what regards coding of these procedures. You cannot really find codes separately, for therapeutic mammoplasty, for oncoplastic breast conservation. So, that's related also to how do you code these procedures in order to get reimbursed or in private to get the insurance companies convinced to cover these procedures, which are different than, so kind of I think difficult to decide, to what level of extent.

Prof Rainsbury: Thank you, Tibor. Can I just pick up one or two things that you covered in your talk and one actually is related to training. Because training is a big issue all over Europe, and getting access to people who have developed these skills and are prepared to teach because a lot of these surgeries are relatively new. Have you any ideas on, you know, how we can improve access to training and overcome some of the problems that exist? I think you touched on curriculum change at European level. What are your thoughts on that?

Prof Kovacs: So, until now, I believe that oncoplastic breast surgery and oncoplastic technique was considered kind of a separate issue. Like, oh I developed my oncoplastic skills, so I become a different type of surgeon. And then, there are the other surgeons, who are doing just traditional breast conservation. So, nowadays, and I can see more and more science for this, in different national guidelines and this is kind of a very good starting point, that oncoplastic approach and that the techniques are already included in the training requirements of the breast cancer surgeon. Therefore, most likely at national levels, at country levels, this will be included in the national breast surgical or general surgical with breast interest curriculums. And I believe there are countries who are more advanced towards this, others are less, there are lots of countries where general surgeons are still doing the majority of breast cancer work, others have changed. The other option is to try to attend or to spend some time of fellowship-based training. And this would be probably the highest level or best option for a breast surgeon, to attend at least one or two years of breast surgical oncology fellowship work and have exposure to oncoplastic and these types of procedures. And of course, national societies or perhaps, health care systems duty would be to establish accredited places, accredited breast units, where the level of training is offered.

Prof Rainsbury: Yeah, yeah, I think that's really, what we're looking forward to, is establishing units that are recognised and have got the capacity to train. Because there are many, many trainees even in the UK, that want this training and can't get hold of it, because their bosses aren't familiar or skilled. One other slide that struck me that you showed, was this rising curve and I think it came from the UK, of the use of oncoplastic breast conservation. Do you think there'll come a time that this will gradually replace mastectomy and that we'll see mastectomy becoming oncoplastic conservation, becoming the default, if you like, a mastectomy almost as a last resort?

Prof Kovacs: So, yes, I can see a tendency towards this and there was also a study showing for similar tumour feature cancers where patients they had the oncoplastic breast conservation, traditional or a mastectomy. Mainly the recurrence rates were very similar. So, maybe, if you have skilled surgeons who they can manage the tumour itself, the excision without doing a mastectomy, but using oncoplastic techniques, that can lead to same as good results. And also, using neoadjuvant approaches, followed by breast conservation techniques, including oncoplastic techniques, can lead of kind of replacement of mastectomies or at least in the vast majority of the cases.

Prof Rainsbury: Thanks, Tibor. I think time is sadly really coming to the end and it just remains for me to thank again, to thank Tibor for a great session and for highlighting the key issues, the current key issues on oncoplastic surgery, backed up by the latest evidence. And I'd also like to thank all the participants who've listened in tonight and asked questions and it's made it a very worthwhile session. Thank you all very much indeed and goodnight.

Prof Kovacs: Yeah, and I would also like to thank you very much, Dick, to assisted me and to have you as a discussant. It is an honour and privilege to do this session together with you. And I'm very grateful to the European School of Oncology to giving this platform and to work together with BRESO, the Breast Surgical Oncology certification project, to offer these sessions in training in breast surgical oncology. As you can see, our next e-ESO session jointly with BRESO is on mastectomies in the third millennium, indications and challenges for the future, with Dr. Giuseppe Catanuto from Sicily and with Dr. Ashutosh Kothari, from Guy's & Saint Thomas, as a discussant. And I wish you all the best and thank you very much for your participation.