

# Extraperitoneal radical surgery in cervical cancer

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The primary goal in the modern treatment of invasive cervical cancer is, in our opinion, to pursue a better compliance for patients who are submitted to radical surgery.

In fact new integrated therapeutic strategies may include, as well as surgery, radiotherapy, neoadjuvant and adjuvant chemotherapy, with a higher cost for the patient's quality of life. In the search for new therapeutic modalities for this disease we always decided to give surgery a central role that could not be given up, even in different protocols, while respecting the quality of life of the patient.

For this reason we recently retrospectively analysed the results of our past surgical experience in the treatment of invasive cervical cancer between 1973 and 1995.

This was intended to find out which kind of surgical experience could better fit in a modern multimodality treatment.

The analysis of the cases showed a significant better compliance for the patients (38 cases) who had had a "Mitra" extraperitoneal lymphadenectomy than those who had the same procedure by intraperitoneal access.

This is true mainly for short-term complications (ileus, infectious morbidity) and for patients who underwent surgery alone as well as postoperative radiotherapy.

A review of the literature confirmed our opinion and showed impressive data about this topic. Wharton<sup>1</sup> reported bowel complications in 27,6% of patients who had an intraperitoneal approach to pelvic nodes and underwent

postoperative radiotherapy. Fifty per cent of these ones had a lethal outcome.

Piver and Barlow<sup>2</sup> reported a 21,7% death rate due to serious bowel complications after transperitoneal lombo-aortic lymphadenectomy and subsequent radiotherapy.

Berman, *et al.*<sup>3</sup> showed that thirty per cent out of 33 patients operated with intraperitoneal approach was submitted to reintervention due to postoperative ileus.

Recently Barter<sup>4</sup> reported a thirty per cent of post-radiotherapy complications in patients operated and irradiated for negative pathological prognostic factors (node metastasis, linfoinvasion, positive surgical margins).

Magrina<sup>5</sup> emphasised that radiotherapy complications are less frequent in patients who had an extraperitoneal lymphadenectomy.

From these data the great advantage of an extraperitoneal approach is quite clear. This well matches with our experience on the reduction of post-operative adhesions, which, in our belief, is obtained by a short exposure time of the peritoneal surfaces<sup>6</sup>.

This means giving small bowel serous surfaces the shorter surgical trauma and dehydration, in view of a subsequent radiotherapy.

That being stated, in 1994 we started a new experience of extraperitoneal approach applied to Wertheim-Meigs intervention.

In this operation we used this new approach for the pelvic and lombo-aortic lymphadenectomy as well as for the parametrial dissection.

In the first 4 cases the intervention was performed completely by extraperitoneal way until the opening of the peritoneum necessary for the colectomy.

In these cases we observed a remarkable difficulty in resecting anterior and posterior parametria.

So we believed the best choice was to limit the extraperitoneal phase to the following procedures: pelvic and lomboaortic lymphadenectomy and section of the lateral parametria. The review of the literature about this topic and the important papers published by Massi<sup>7</sup> and Dargent<sup>8</sup>, as well as a comprehensive data analysis on our long lasting experience in Schauta operation, widely performed from 1973 to 1984, suggested us the possibility of employment of this technique together with an highly effective extraperitoneal lymphadenectomy.

This combination could have been effective mainly in patients affected by cervical cancer FIGO Stage IB low volume and in obese patients at stage IIA or bulky tumours with good response to neoadjuvant chemotherapy.

From March 1995 to November 1995 we used again this technique in nine cases. A recently published paper by Delgado<sup>9</sup> strengthened our choice for this new surgical approach.

## Abdominal approach

### *Materials and methods*

The first step of our technique is an abdominal incision with intermediate features between Maylard's and Churney's.

In the past we used this incision in young patients affected by benign pathology where a wider access than the traditional Pfannenstiel was required.

This incision allows, if well arched at iliac spines, to access extraperitoneal spaces easily, even in obese patients.

The intervention goes on with ligature and section of round ligaments (and infundibulopelvic ligaments if adnexectomy is required), pelvic

lymphadenectomy and, when necessary, lomboaortic inframesenteric lymphadenectomy.

Fast and easy is the containment of small bowels through the peritoneum. This allows a good access to iliac and lomboaortic vessels.

In this phase we sometimes perform hypogastric veins ligature as a surgical prophylaxis of deep venous thrombosis

Subsequently ligature and section of the uterine artery, paravesical and pararectal fossae preparation and lateral parametria dissection were carried out.

The latter is facilitated by a better view and therefore allows an easier modulation of the extent of radicality.

As already stated in four cases (the first ones) the radical hysterectomy was completed by extraperitoneal way.

### **Results**

In our Institution from January 1992 to January 1996, 22 patients affected by carcinoma of the cervix were submitted to extraperitoneal radical hysterectomy.

These patients had a mean age of 47 years (range 31 - 68).

Twelve out of 20 squamous cell carcinoma were FIGO Stage Ib, six were stage Ila and two stage lib (after neoadjuvant chemotherapy with complete pathological response). Two patients were affected by adenocarcinoma of the uterine cervix stage Ib.

Ten patients received a preoperative neoadjuvant chemotherapy (7 PR and 2 pathological CR).

The mean duration of operation was 160 minutes, with a range of 140 - 240 minutes. Mean intraoperative blood loss was 570 cc., ranging between 220 and 2.000 cc. Suction drainage from the parametrial fossae was obtained by two Jackson-Pratt drainages.

They were removed after a mean of 4 days (mean serous and blood loss of 330 cc. in the first postoperative day).

No postoperative bowel obstruction occurred, and all the patients had a fast recovery of the intestinal function (15 in the 1st postoperative day, 6 in the 2nd and one in the 3rd). All of the patients started liquid nourishment in the second day.

Postoperative resumption of normal bladder function was achieved after a mean time of 8 days, with a range between 4 and 17 days.

Febrile morbidity, defined as a temperature of more than 38° excluding the first 24 hr after surgery, occurred only in one out of 22 patients, with a maximum of 38.3°C in the 3rd postoperative day, lasting two days.

Two patients suffered main complications: an uretero-vaginal fistula, with natural repair in tenth postoperative day and a first degree hydro-ureteronefrosis disappeared at the first post-operative follow-up after 30 days.

There were no episodes of wound separation, pelvic abscess, phlebitis and pneumonia. The median number of lymphnodes dissected was 35 (range 26-62).

We should point out that in the same Institution in a previous series of patients operated by intraperitoneal access the median number of dissected nodes was not different (unpublished data).

## Vaginal intervention (SCHAUTA)

### *Materials and methods*

In all the cases who had a radical intervention completed by vaginal way (modified Schauta) the surgical steps were the same until the resection of lateral parametria.

The only difference is the bilateral split of the lateral pelvic peritoneum to allow a natural lymphatic drainage. This technique was also used when in young patients an ovarian transposition was mandatory in view of an adjuvant radiotherapy.

With the patient in lithotomy position, a Schuckardt incision is performed.

The intervention goes on with the removal of the vagina, after the original technique of Amreich.

This step is mostly useful in patients affected by cervical cancer stage IIa.

The Schauta-Amreich intervention is carried out as classically described, but it is shorter and with less blood loss because of the previous abdominal surgery.

Moreover the previous section of lateral parametria helps downward traction of the uterus.

### *Results*

Nine cases affected by squamous cell carcinoma of the cervix presenting between August 1994 and December 1995 were treated at our Institution.

These patients had a mean age of 53 years (range 40-73).

The mean duration of operation was 150 minutes, with a range of 130 - 190 minutes.

Mean intraoperative blood loss was 450 cc., ranging between 220 and 810 cc.

All the patients had a median recovery time of the intestinal function of 2 days (range 1-2).

Postoperative resumption of normal bladder function was achieved after a mean time of 8 days, with a range between 6 and 14 days.

No complications aroused during hospital stay or were recorded at follow-up visits.

### *Comments*

We point out that in this first series, the duration of operation is shorter than that indicated by Delgado<sup>9</sup> and is susceptible of improvement when all of the nurses of the operatory room will be more familiar with this technique (timing and swiftness of the change of position of the patient) to reduce at a minimum dead time.

It is nonetheless remarkable that the mean duration of the radical vaginal intervention was ten minutes shorter than the abdominal one.

This means that a modified Schauta-Amreich intervention preceded by the extraperitoneal technique is feasible and time-saving.

## Conclusions

A continuous research for the minor surgical trauma for the patient, respecting the appropriate radical extension, led us to use a new extraperitoneal approach to the pelvic and lombo-aortic lymphadenectomy as well as the resection of lateral parametria.

Another surgical option (vaginal or abdominal access) was considered to give patients the lesser impact on quality of life, also in view of the integrated therapies nowadays adopted. The results obtained were encouraging and confirmed by other authors, as Delgado. Our concept of surgical approach in selected patients affected by cervical cancer finds in his paper a complete agreement.

This author defines his intervention as a “retroperitoneal radical hysterectomy” and he confirms the usefulness of the Schauta intervention, simplified by the previous resection of lateral parametria, uterine and ovarian vessels by extraperitoneal approach.

However we should point out that some differences may be found between the two experiences.

The abdominal incision is unique, transverse, low and therefore of better aesthetic impact on younger patients.

Nonetheless it allows an easy access to the high extra-peritoneal space to carry out a good low lombo-aortic lymphadenectomy (i.e. until the inferior mesenteric artery), which is important in obese patients.

Of course the wider surgical access means an easier control of iatrogenic blood losses. The approach to the posterior parametrium is completely different in our Institution: it is resected by vaginal way, to avoid a larger blood loss in patients at risk.

Delgado underlined some problems in obese patients and in those with android pelvis.

In our series we never found obstacles in accessing the retroperitoneal space, because of the wide surgical opening which well balances difficulties due to the depth of the anatomical structures.

In our opinion it is not essential at least a small grade of pelvic “relaxatio” to choose Schauta intervention.

As a matter of fact a Schuckardt incision reduces vaginal depth as well as the extraperitoneal section of the cardinal ligament makes easier the descent of the uterus by downward traction on the vaginal cuff.

We agree with Delgado in not isolating the ureter in the tract preceding the entrance in the parametrial tunnel, limiting its exposure only to the iuxta-vesical tract during the vaginal part of intervention.

This step is easily obtained thanks to the previous dissection of the ureter from the cardinal ligament by extraperitoneal way and is therefore carried out easily compared to the classic Schauta-Amreich intervention.

We strongly believe, as suggested by Delgado, that this intervention means a real advantage in time saving, minor cost and surgical extent of radicality compared to a laparoscopically assisted radical hysterectomy, as proposed by Dargent<sup>10</sup>.

The limited number of patients and the short follow-up does not allow to draw conclusions about survival, even if the surgical outcome suggests that no difference should be expected between our intervention and the classic Wertheim-Meigs.

Our data about the compliance of patients submitted to this new radical intervention are good and support this approach.

In our opinion this operation could be used not only in selected cases when the vaginal approach makes easy to modulate the extent of radicality but also in patients with “typical” surgical indication.

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