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PARTIAL ANTERIOR RESECTION OF THE PELVIS

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In 1962 we attended a female patient who had a large chondrosarcoma of the left ischio-pubic ramus which formed a protrusion within the vulva. This same mass had prevented the normal birth of a child by obstructing the lumen of the pelvic ring, besides causing both pain and problems on micturition. The roentgenographic image was almost completely pathognomonic of chondrosarcoma.

Since the patient was a 24-year-old female, it was decided that surgery was the indicated means of treatment. Diagnosis was confirmed by means of a biopsy.

It was decided, after careful study of the regional anatomy, that the technique earlier reported by Milch (1949) would be the most appropriate and adaptable to our needs. Some doubts remained as to the outcome of the surgical resection of a section of the pelvic girdle since Steindler (1955) had stated that: "The bones are fixed within the pelvic girdle under considerable elastic tension; if this intrinsic equilibrium is destroyed by resecting one part, it will spring out in a manner very similar to the thoracic cavity". Besides, the antecedent existed whereby obstetricians had attempted to solve the problem of a narrow pelvis by making parallel cuts on either side of the symphysis pubis with a Gigli saw. The procedure was apparently abandoned because of resultant pain and the appearance of a waddling gait. Therefore it was decided that a large tibial graft be used to buttress the pelvis, fixing it in place with screws, thus avoiding pelvic spreading and alterations in gait.

Surgery proved to be more difficult than had been expected and we were unable to remove the tumor as a whole. The mass had to be sectioned in order to remove the posterior portion. The surgical procedure was not prolonged to include the planned graft, which would be done at another time, after satisfactory recovery. Post-operative

evolution was uneventful, except to mention that one week after surgery the patient initiated deambulation without claudication or pain.

In this way, we learned that it is possible to excise a large fragment of the pelvic girdle, anteriorly, interrupting its normal continuity, without producing either an alteration in biomechanics or pain and/or instability upon deambulation and without producing alterations in pelvic weightbearing during pregnancy or labor. Later treatment of two similar cases has confirmed our point of view. No special emphasis is made as to the onchological aspects of these patients since that is not the purpose of this paper, nor would we have anything new to add on the evolution of chondrosarcomas, and it is a well-known fact that local recurrences frequently occur.

CLINICAL CASES

G.P.M. File No. 42413, National Institute of Cancerology. The main clinical data have practically all been exposed in the introduction and it will be only necessary to add that the patient returned 14 months later and reported that she had been leading a normal life and had become pregnant once again. Childbirth had been normal. After the birth of the child she had once again noticed a tumorous swelling that had been growing slowly, and this was the reason for her visit at this time. She was also suffering from urinary incontinence. A new tumor, larger than the first, was found. X-rays once again showed a large calcified mass occupying part of the space left by the resection. A new operation was performed in June, 1964. Upon completion of the extirpation of the tumor which left a large cavity, due to the fact that on this occasion the tumorous mass had invaded part of the peritoneum, the patient fell into shock and all efforts to save her life proved unsuccessful.

G.R.F. File No. 54574. National Institute of Cancerology. Female aged 25, who came for consultation in March, 1967, due to a tumor that had appeared 4 years previously in the upper portion of the left thigh, and which had been operated on twice, but nevertheless continued to grow. She had 3 children, the youngest born six months previously. Upon examination the patient was found to be underweight and was reluctant to cooperate due to her low level of intelligence. Pertinent data encountered included presence of a tumorous mass, plainly visible in the lower part of the abdomen, more or less rounded and about 30 cm in diameter, occupying the left flank, the inguinal region and the upper part of the left thigh. In the middle of the mass, following the inguinal fold, there was a scar approximately 15 cm long. The coxofemoral joint moved freely (Figure 1).

An operation was performed on April 5, 1967, and the tumor was extirpated following the technique reported by Radley et al. (1954), modified to fit the needs of the case by extending the incision outwards following the inguinal fold. It should be noted that during the operation the vessels were found to have been rejected by the mass and it was necessary to dissect them in order to free them.

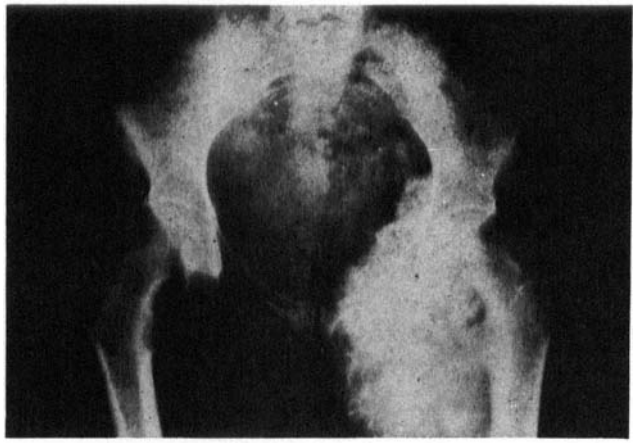

Figure 1. Very large calcified irregular mass, inserted in the pelvic ring, which has apparently invaded the coxofemoral joint.

Figure 2. Notice the absence of the ischio pubic ramus.

As in the preceding case, it proved impossible to dissect or mobilize the posterior portion of the tumor, and the mass had to be sectioned in order to be able to resect this part.

The histological study proved the tumor to be a chondrosarcoma.

Post-operative evolution was satisfactory and the patient was followed up by means of periodic consultations for a period of six months (Figure 2).

At this point she stopped coming and did not reappear until October 1970. During this interval she had become pregnant again and normal delivery had taken place at the end of 1969. Since then she had noticed that a tumor was once again growing in the area of the old scar.

X-rays again showed a large calcified mass (Figure 3). Chest X-rays did not reveal any metastatic lesion.

Figure 3. Recurrence of the chondrosarcoma.

Another operation was performed on October 28, 1970. The vessels and the crural nerve were found invaded by the tumor. The nerve was freed and on attempting to dissect the artery a tear occurred which necessitated ligation below its juncture with the circumflex and deep femoral arteries which were hypertrophic. Circulation in the foot was maintained in good condition.

The wound was closed and a further operation was planned in order to resect the tumor and do a bypass of the femoral artery or a teflon implant graft.

The patient refused to consent to this operation and has made no further visits for consultation.

B.L.V. Consultation file 4935 (Private office L.Z.). Female, aged 22, single, a bank employee who works standing and came for consultation because she had noticed pain in the right groin that had been steadily increasing for the previous 2 months. She had also noticed a growth in the same spot. Physical examination showed a well nourished person with a hard tumorous mass in the right groin causing increased volume of the right labium majus. X-rays showed a calcified mass implanted in the right ischiopubic ramus that was diagnosed as chondrosarcoma.

An operation was performed on July 30, 1970, and the tumor was extirpated following the Radley technique (1954). It should be noted that, in this case also, mobilization of the posterior portion of the mass, without resection of the rest of the tumor proved impossible once again preventing extirpation of the tumor as a whole.

The patient returned to her usual activities three months after operation and has continued until now without discomfort. The latest clinical and radiological examination was made January 10, 1973. No abnormal data were found and she leads a normal life.

DISCUSSION

In reviewing the literature on this subject we find, on the one hand, Steindler's (1955) previously mentioned statement: "The bones are

fixed within the pelvic girdle under considerable elastic tension; if this intrinsic equilibrium is destroyed by resecting a piece, it will spring out in a manner very similar to the thoracic cavity". (Page 201, paragraph 4). On the other hand, there is the fact that those who have reported on extirpation of the ischium generally do not mention the post-operative behaviour of the patient as far as gait is concerned, nor the extent of the resection effected.

In Byers' article (1963) it can be seen that the resection was minimal, taking in only a portion of the ischium itself without affecting the roof of the obturator foramen. This resection could by no means be expected to alter pelvic mechanics or the patient's gait, since it did not affect the interior contour of the pelvic ring.

We believe that, on the basis of the three cases reported here, it is possible to prove that integrity of the pelvic ring is not indispensable for gait stability since, in these patients, it has not been affected in spite of ample resections.

On the other hand, we believe that the pain and lack of stability reported in the past is a consequence of the parasymphyseal osteotomies performed by obstetricians, due to the fact that these interventions produced a pseudoarthrosis that might possibly have been avoided had a resection been performed.

It is quite possible that stability may be achieved in cases like ours through the posterior ligaments of the pelvis and the integrity of the sacroiliac joint, since as Steindler (1955) mentions, Putschar points out that in cases of congenital absence of the anterior portion of the pelvic girdle, hypertrophy of the posterior osseous portion and of the ligaments is observed.

From the technical viewpoint, insofar as the onchological aspects of these cases are concerned, it should be mentioned that a common factor in all three cases, which may possibly play an important role in the recurrences of the tumor, is that the posterior portion of such tumors is difficult, if not impossible, to mobilize, and in all three cases it was necessary to section the greater anterior mass, before removing this posterior portion.

We believe that our study of these cases, however brief, opens the way for a study of pelvic mechanics, through the results obtained from necessary surgery. In the future it may be possible to change some of the concepts we have followed for many years.

CONCLUSIONS

A useful conclusion that may be reached from these experiences, is that interruption of the continuity of the pelvic girdle in its anterior portion, even when the resection is ample, does not produce alterations in gait or in the mechanics of pregnancy or childbirth.

SUMMARY

Presentation is made of 3 cases of chondrosarcomas implanted in the ischiopubis ramus and treated by partial anterior resections of the pelvic girdle. The patients treated in this manner were able to walk without pain or instability and two of them became pregnant after surgical intervention with no obstetrical problems.

In two cases, there were recurrences of the tumor.

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