

**THE SKELETAL REMAINS FROM
TWO GRAVES OF THE NORTHEASTERN APSIS
OF THE CHURCH AT UMM QEIS
(GADARA, JORDAN)**

by
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During a research visit to Jordan in 1980, the authors used the opportunity, together with E.W. Krüger of the German Protestant Institute for Archaeology, Amman, to survey the site of the antique Gadara (Umm Qeis), near the northern border of Jordan.

In the northeastern apsis of the church the skeletal material of two individuals in open stone-kist-graves was examined. The interments were excavated in the 70s (see Pl. I,1), and apparently date back to the late Roman period. An osteological examination of the badly fragmented material was still incomplete, and therefore we recovered it with great care, and examined it at the German Protestant Institute for Archaeology (Amman). The results are presented in the following report.

As can be seen from Fig. 1a and b, which schematically show the skeletal parts found, only few fragments of both skeletons remained. These, however, are sufficient to diagnose the age and sex of the individuals reasonably well, and to record some pathological conditions.

Umm Qeis Skeleton 1

State of preservation: Cranial skeleton: From the neurocranium, fragments are preserved of the frontal and occipital squama, of the right parietal, temporal and ala major of the sphenoidal bones. From the splanchnocranium, only parts of the maxilla as well as some teeth (ri. I, le. I1, I2, ri. C) are left.

Postcranial skeleton: The vertebral column is represented by fragments from thoracal and lumbar vertebrae. From the shoulder girdle, one fragment of the left scapula remained, and from the thorax, some ribs and the sternal body with the

sciphoid process are preserved (length of the corpus sterni: 112 mm). The shaft and distal part of the left humerus and, furthermore, the distal part of the left radius remained (width of distal epicondyle of humerus: 60 mm; greatest distal width of radius 31.5 mm). Two metacarpals and one phalanx of the right hand were recovered. The pelvis is mostly destroyed, except for the left iliac blade; the shaft fragments of the lower long-bones (femur, tibia, fibula) are also greatly damaged.

Age determination: To diagnose the age, only scanty information is present in this case. According to the degree of dental abrasion (Brothwell 1971; Miles 1963; Molnar 1971), which in the front teeth reaches to the dentin and which was very strong also in the molars, a late-mature age is highly probable. This conclusion is supported by the ossification of the lambdoideal suture (see Vallois 1937). Furthermore, the degenerative-reparative changes of the vertebrae point to a mature age. As to the lack of other, "classical" characteristics for aging (see N.N. 1980; Acsádi and Nemeskéri 1970), the diagnosis can only be: probably late-mature (50-60 years).

Sex determination: According to our *in situ* examination, a male sex is indicated by a very narrow-V-shaped greater sciatic notch (Novotný 1986), the pronounced muscle-markings on the temporal bone (temporal line) and the nuchal plane, and furthermore by the deltoid tuberosity and the overall robustness of the humerus. Otherwise, the radius is rather gracile (least circumference 38 mm); however, the traits predominantly point to a diagnosis of "male sex".

Morphological and Pathological Observations: The morphological-typological diagnosis of both skeletons is very limited

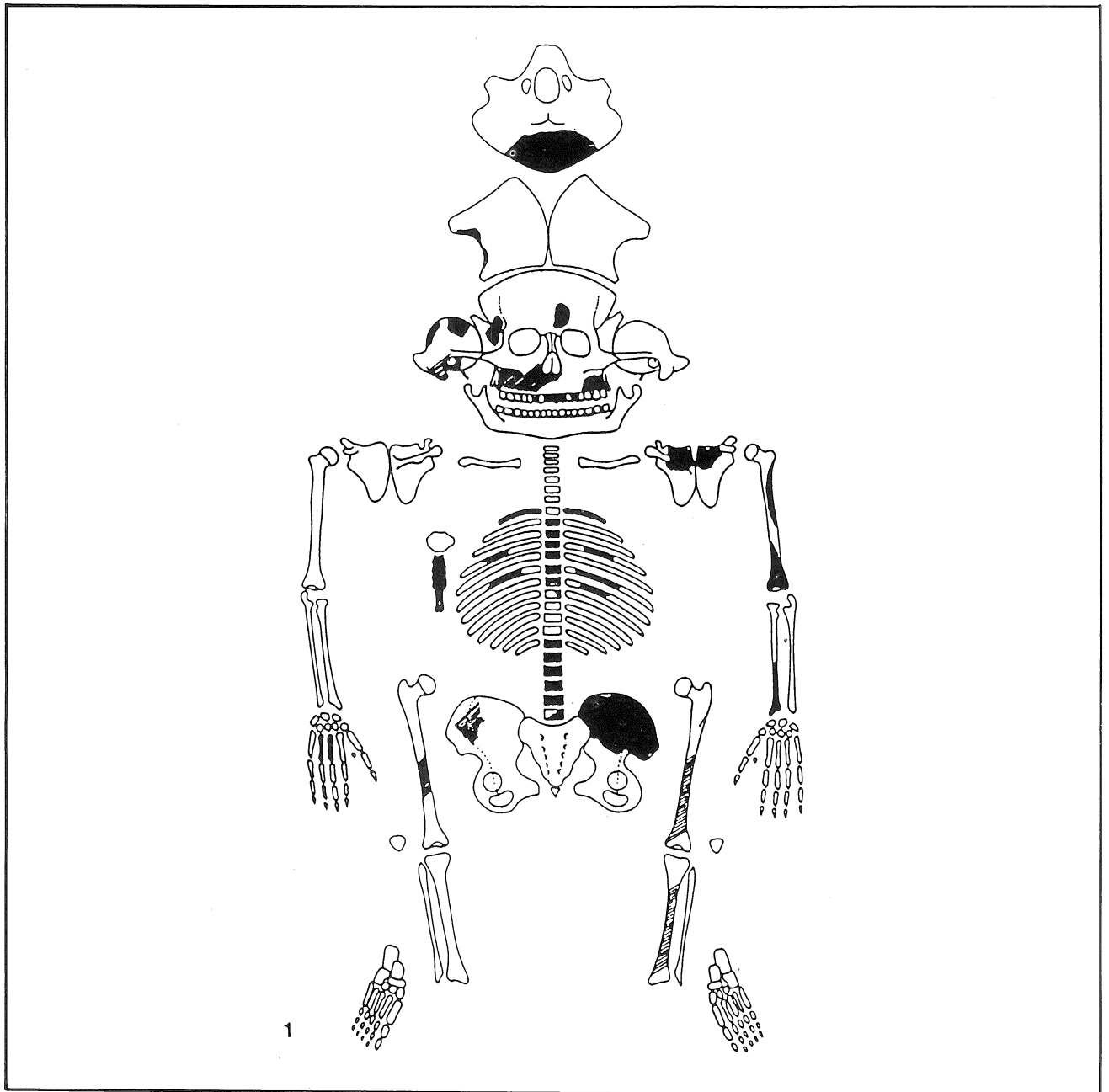


Fig. 1a. The preserved skeletal remains of skeletal material no. 1 shown by dark coloured areas in the layout.

due to the bad state of preservation. In this cranial skeleton, only an asymmetrical nasal septum (to the right side) and a narrow nasal aperture can be stated. In general, the postcranial skeleton is relatively short with robust muscle markings.

Anatomical and pathological abnormalities worth noting are intravital loss of M1, with buccal abscess and periodontitis; aplasic M3 (resp. non-erupted wisdom-teeth); enamel hypoplasia of the incisors (nutritional deficiencies during childhood).

On the postcranial skeleton, (see Pl. I,2a) spondylosis deformans and osteochondrosis vertebrae can be diagnosed. One proximal middle-phalangeal joint shows arthritis deformans.

Umm Qeis Skeleton 2

State of Preservation: Cranial skeleton: Only few neurocranial fragments are preserved (see Fig. 1b) — parietal, frontal and occipital bones are fragmentary.

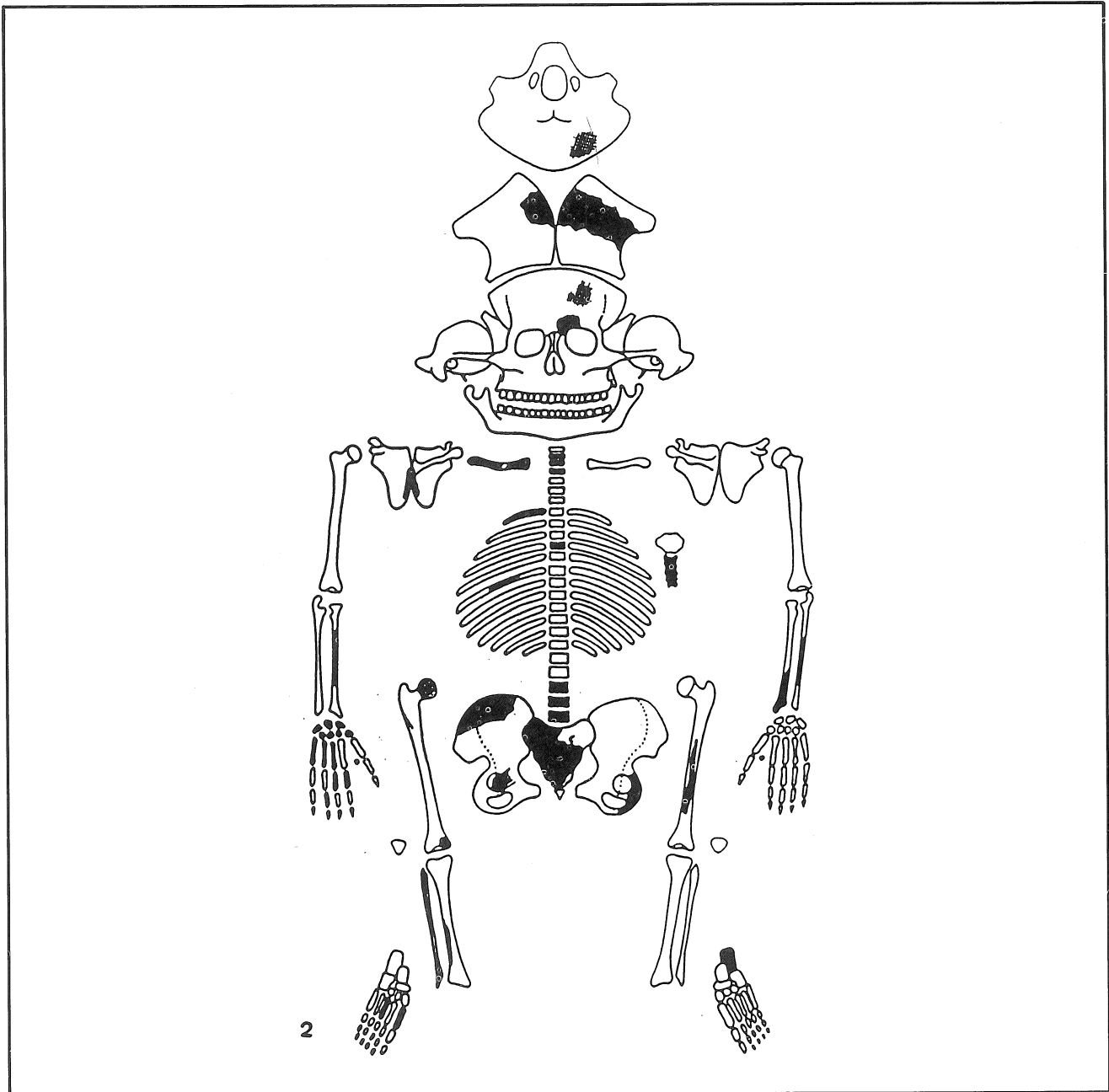


Fig. 1b. The preserved skeletal remains of skeletal material no. 2 shown by dark coloured areas in the layout.

Postcranial skeleton: From the vertebral column, the axis as well as two more cervical vertebrae remained (transv. diameter of the dens axis 10.4 mm; sagittal diameter 12.2 mm); several other fragments of the thoracic and lumbar region are available. Beside a fragment of the scapula (medial margin), a nearly complete clavicle as show in Pl. I,2b remained from the shoulder girdle. Though bones of the chest were practically missing, the complete body was recovered. The upper

extremity is represented by the right radius-diaphysis (gr. diameter 14.2 mm), the left distal radius (epicondylar breadth 30.5 mm), the left ulnar-shaft, carpal bones of the left hand as well as metacarpals and phalanges.

From the pelvic region, only fragments of the sacrum as well as the right iliac crest, both acetabula and the left ischial bone still exist.

Of the lower extremity only the right femur head (diameter 50 mm) in addition

to parts of the diaphysis were preserved, as well as an epicondylar fragment and a nearly complete fibula. Finally, one fragment from the tibia-shaft, right, the left tarsus and two right metatarsal bones were recovered.

Age determination: As the sagittal suture is definitely closed in the area of S 2 and S 3, one has to count on an early mature age (Vallois 1937). In addition, spondylotic changes in the vertebral column point to a progressing age. In general, the diagnosis can only be limited to an age-range of "mature".

Sex determination: A determination of sex is based on the absolute size of the vertebrae and the clavicle, the narrow development of the sacrum (ca. 110 mm) and the large femur head. Furthermore, the ischial

tuberosity (tuber ossis ischii) is massive. Also, the linea aspera and the partially observable, strong superciliary arc support the diagnosis "male", although, again, the radius is delicately built. The sternum and the thickness of the cranial bones (7-8 mm) are only of moderate size and development.

Morphological and Pathological Observations: The poor state of preservation of the individual does not allow a typological determination. However, several pathological conditions can be stated. In Pl. I,2b, a cervical vertebra with osteochondrosis deformans, spondylosis deformans and a slight left osteoarthritis vertebrae is shown together with a lumbar vertebra suffering from strong spondylotic lipping. Finally in Pl. I,2b, a sternum, distorted to its right side, is presented.

Table 1: Individual measurements and indices of the skulls.

<i>Skeleton No.</i>		<i>68 (male)</i>	<i>WE 99 (male)</i>
<i>Variable (MARTIN/HOWELLS)</i>			
1	glabello-occipital-length	176	(190)
1d	nasio-occipital-length	174	---
3	glabello-lambda-length	167	---
5	nasion-basion-length	91	---
8	cranial breadth	(139)	160
9	least frontal breadth	93	106
10	maximum frontal breadth	114	128
10b	bistephanic breadth	113	116
11	biauricular breadth	123	---
12	biasterionic breadth	107	133
13	bimastoideal breadth	94	123
17	basion-bregma-height	117	---
20	auriculo-bregmatic height	102	112
23	horizontal circumference	(494)	560
24	transversal arc	288	317
26	frontal sagittal arc	120	---
27	parietal sagittal arc	111	135
28	occipital sagittal arc	---	130
29	nasion-bregma chord	104	---
30	bregma-lambda chord	100	122
31	lambda-opisthion chord	---	111
FRF	frontal fraction	46	---
PAF	parietal fraction	36	68
FRS	frontal subtense	27	---
PAS	parietal subtense	21	23

MDH	mastoid height	28	33
MDB	mastoid width	10	19
40	basion-prosthion length	90	---
44	biorbital breadth	95	---
45	bizygomatic breadth	123	---
46	bimaxillary breadth	83.5	---
47	total facial height	111	---
48	upper facial height	66	---
WMH	cheek bone height	20	25
49a	interorbital breadth	21.5	---
50	anterior orbital breadth	19.5	---
51	orbital breadth	41	---
52	orbital height	34	35
54	nasal breadth	25	(30)
55	nasal height	49	---
57	simotic chord	8.5	---
57/1	maximum nasal bone breadth	15	---
60	maxillo-alveolar length	58.5	50
61	maxillo-alveolar breadth	49.5	64
62	internal palatal length	42	---
63	internal palatal breadth	36	39
65	bicondylar breadth	116	---
66	bigonial breadth	(99)	113
67	'bimental' breadth	43.5	47.5
69	height of mand. symphysis	28.5	38
69/1	height of corpus mandibulae	---	34
69/2	width of corpus mandibulae	---	11
70	height of ascend. ramus	56(54)	67
71a	min. a-p width of ramus	26.5	35
68	proj. length corp. mand.	63.5	83
79	angulus mandibulae	138.5	129
<hr/>			
8/1 x100	cranial index	79.0	84.2
17/1 x100	vertical index	66.5	--
20/1 x100	index no. 14	58.0	58.9
20/8 x100	index no. 15	73.4	70.0
29/26x100	index no. 122	86.7	--
30/27x100	index no. 124	90.9	90.4
31/28x100	index no. 125	--	85.4
9/10x100	index no. 112	81.6	82.8
9/8 x100	index no. 113	66.9	66.3
47/45x100	facial index	90.2	--
48/45x100	index no. 139	53.7	--
66/45x100	index no. 140	80.5	--
52/51x100	orbital index	82.9	--
54/55x100	nasal index	51.0	--
63/62x100	palatal index	85.7	--
40/5 x100	gnathic index	97.8	--
71/70x100	index no. 163	(47.3)	52.2
45/8 x100	index no. 171	88.5	--
9/45x100	index no. 173a	75.6	--

Concluding Remarks

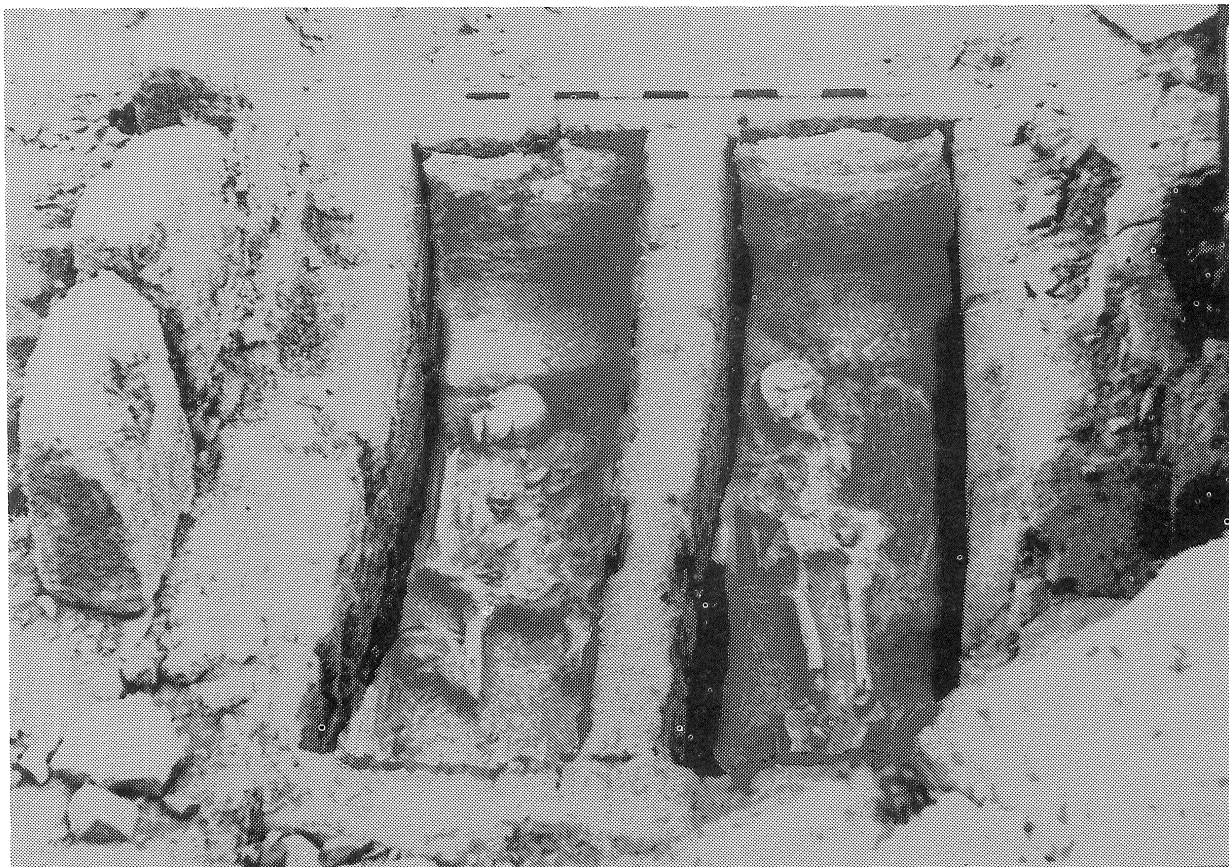
The examination of two probable late Roman skeletons from the northeastern apsis of the church at Gadara (Umm Qeis) showed that the two burials contained males, of which one reached most likely a late-mature age, whereas in the other case, only an age of "mature" (40-60 yrs.) can be given. Typological details cannot be stated, but with regard to palaeopathology, definite signs of degenerative changes of the vertebral column were recognized: i.e. the spondylosis deformans, osteochondrosis deformans (SK #1) and, in addition,

osteochondrosis vertebrae (SK #2). Furthermore, intravital toothloss, periodontitis, a buccal abscess and arthrosis deformans of finger-joints were diagnosed on skeleton #1.

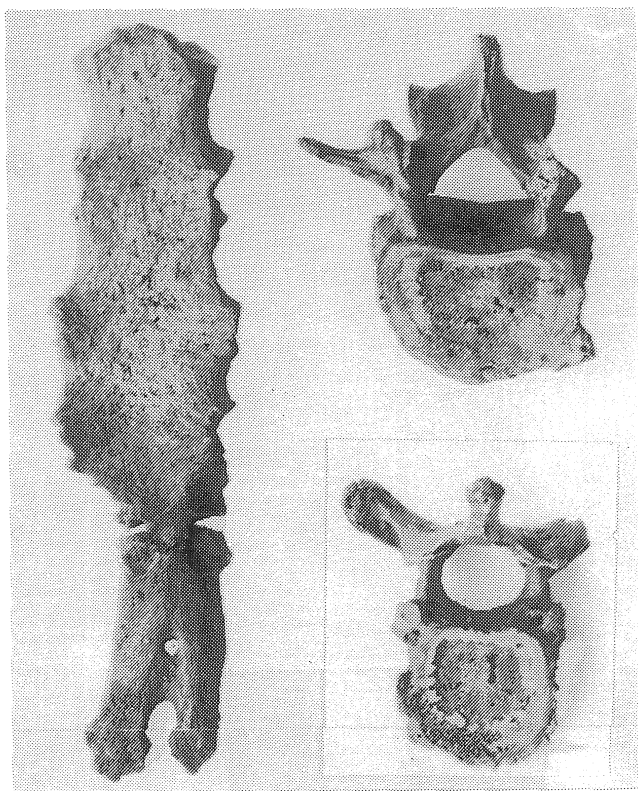
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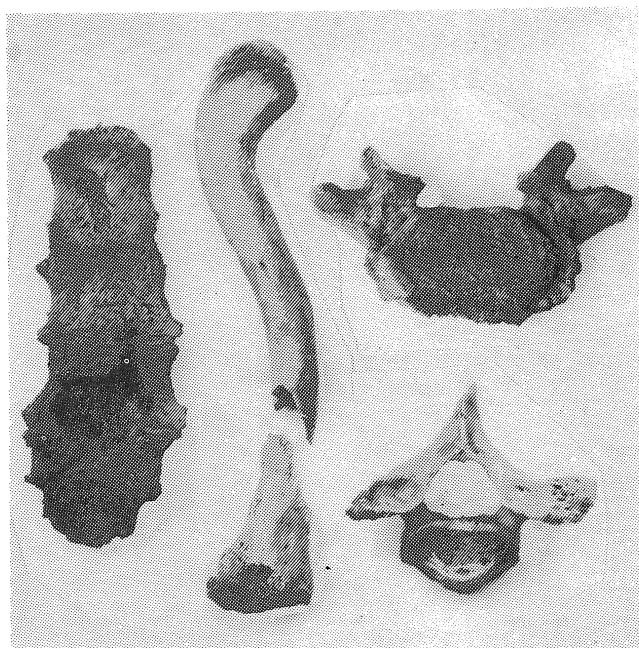
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1. Stone-kist-graves of the northeastern apsis of the church at Umm Qeis; *in situ* photograph during excavation in the early 70s.



2 a. Sternal body and two vertebrae with pathological defects, skeleton no. 1.



2 b. Asymmetrical sternal body, clavicle and two vertebrae with pathological defects, skeleton no. 2.