

Fig. E-1

The treatment algorithm.

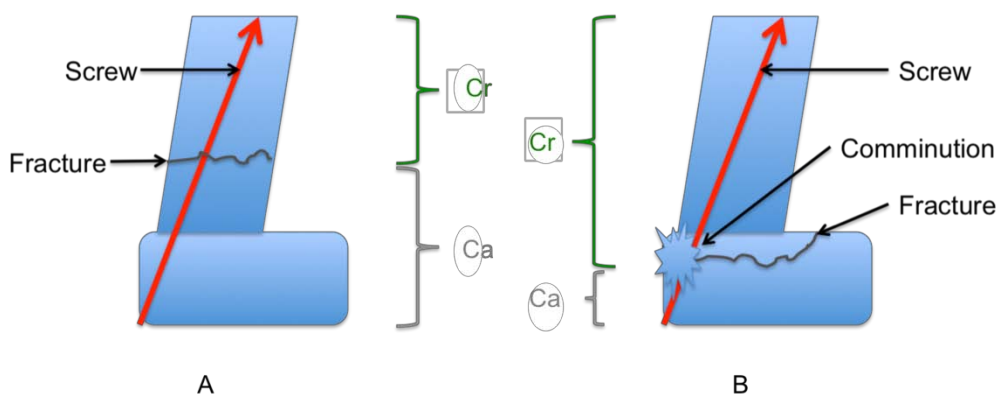


Fig. E-2

Schematic diagrams of dens fractures. Each fracture line separates a cranial fragment labeled Ca and a caudal fragment labeled Cr. **Fig. E-2A** Anderson and D’Alonzo²³ type-II fracture. There is good anchorage of the screw in the cranial and caudal fragments. **Fig. E-2B** Anderson and D’Alonzo²³ type-III fracture with anterior comminution. There is poor anchorage of the screw in the caudal fragment, which is much smaller in this type of fracture than in a type-II fracture such as the one shown in Figure E-2A.

TABLE E-1 Patient and Accident Characteristics

	No. of Patients			Age* (yr)
	Total	Male	Female	
All patients	71	40	31	66.0 (17-97)
Type-II fracture	47	23	24	66.3 (18-92)
Type-III fracture	24	17	7	65.3 (17-97)
Operatively treated	38	22	16	64.5 (17-91)
Conservatively treated	31	18	13	68.0 (17-97)
Death before surgery	2	0	2	82.0 (80-84)
Type of accident				
Fall from upright position	43	19	24	75.9 (17-97)
Fall out of bed	3	2	1	82.3 (79-87)
Hitting of head against a wall without falling	1	1	0	82
Traffic accident	14	11	3	43.5 (18-77)
Skiing or snowboard accident	4	2	2	46.8 (17-70)
Bicycle accident	6	5	1	46.0 (24-62)

*Values are given as the mean, with the range in parentheses.

TABLE E-2 Concomitant Injuries

No. of Patients*	Concomitant Injury
15	None
23	Minor contusions and abrasions
8	Fracture of C1
2	Fracture in spine segment other than C1 or C2
23	Brain concussion or hematoma
3	Blunt thoracic trauma
7	Extremity fracture
4	Broken nasal bone
1	Stable fracture of anterior pelvic ring

*Some patients had more than one injury.

TABLE E-3 Neurological Deficits

Frankel Grade	No. of Patients	Outcome After Treatment
A	3	All 3 died 4 months after surgery
B	2	1 improved to grade C, 1 remained grade B
C	3	All improved to grade D or E
D	1	Grade E after surgery
Dysesthesia of the upper extremities	2	1 complete remission, 1 with dysesthesia in fingertips 12 months after surgery