COMPARISON OF CORTISONE ACETATE AND A CODEINE MIXTURE AS ADJUVANT TREATMENT IN JUDET ARTHROPLASTY

BY

G. P. ARDEN

Heatherwood Orthopaedic Hospital

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Experimental work by Ragan, Howes, and their associates (1949, 1950) has shown that fibrous scarring is decreased by cortisone. Hip arthroplasty may be followed by excessive fibrosis and by ectopic new bone formation which causes considerable disability. Cortisone given locally and systemically has been shown by Stinchfield (1950) to improve this condition in nylon hip arthroplasty in dogs. We have therefore investigated the use of cortisone as an adjuvant to Judet arthroplasty in man.

Selection of Cases

Eighteen patients (two bilateral=twenty hips) were selected, suffering from either degenerative changes of the hip or from rheumatoid arthritis with pain severe enough to justify operative treatment, conservative measures having failed. Cases were selected at random for treatment by cortisone or codeine by a system of numbered envelopes in series, only the hospital pharmacist knowing which patients were receiving cortisone.

The patients were admitted to the hospital one week before operation.

Treatment

Cortisone acetate was given in a pink, raspberry-flavoured mixture in mist. codeine co. which alone was used for the control series. Cortisone was started 6 days before the operation at a dosage level of 150 mg./day in three divided doses for the first 4 days, then 100 mg. in four doses for the following 8 days, 75 mg. in three doses for 8 days, and finally 50 mg. for 6 days, making a total of 23 g. cortisone acetate in 26 days.

The basic codeine mixture used for the control group contained aspirin gr. 4, phenacetin gr. 4, codeine phosphate gr. $\frac{1}{8}$, to the half ounce; it was

given at the level of 1 oz. three times a day for 4 days, then $\frac{1}{2}$ oz. four times a day for 8 days, then $\frac{1}{2}$ oz. three times a day for 8 days, and finally $\frac{1}{2}$ oz. twice a day for 6 days, making a total of 11.5 gr. codeine in 26 days.

Those treating the patients did not know which cases were on codeine or cortisone (the severe oedema of legs in a patient on codeine was mistakenly attributed to cortisone).

Methods of Assessment

Pain.—This was assessed in four grades from 0-3, and measured before operation, at weekly intervals until discharge, and then at 3, 6, and 12 months.

Range of Movement in Hip.—Clinical assessments of angular movement were taken without the use of a goniometer from a position of full extension of the hip. After the operation the range of movement of the affected hip was noted weekly until discharge, and then in the out-patients department after 3 months and 6 months.

Functional Result.—This was assessed 6 months after operation on the following basis:

- (i) *Good.*—Able to walk one mile 3 months after operation. No real pain in hip. Has returned to former occupation or activity. Uses one stick only.
- (ii) *Fair.*—Able to walk up to half a mile. Some pain in hip. Has returned to light work or limited activity at home.
- (iii) *Poor.*—Able to walk in house only. Considerable pain in hip. Unable to work and confined to house or bed.

TABLE I
CASE ANALYSIS

Drug	Hip No.	Age (yrs)	Sex	Diagnosis	Hip Involved	Duration of Symptoms	Signs and Symptoms			Trendelenburg's	Use of Sticks	Domestic Difficulties		
							Pain	Stiffness	Limp			Putting on Shoes	Going Upstairs	Bathing
Cortisone	1	59	F	Rheumatoid Arthritis	L	12 yrs	7/7	2/7	3/7	4/7	4/7	6/6	0/6	2/6
	2			Rheumatoid Arthritis	R									
	3	46	F	Osteo-Arthritis	R	1 yr								
	4	75	F	Osteo-Arthritis	R	1 yr								
	6	40	M	Osteo-Arthritis	L	14 mths								
	9	61	F	Rheumatoid Arthritis	L	9 yrs								
	10	68	F	Osteo-Arthritis	R	10 yrs								
Codeine	11	62	F	Rheumatoid Arthritis	L	6 yrs	8/8	2/8	8/8	5/8	5/8	7/8	5/8	1/8
	12			Rheumatoid Arthritis	R									
	13	63	F	Rheumatoid Arthritis	L	4 yrs								
	14	64	M	Osteo-Arthritis	R	8 mths								
	16	52	M	Osteo-Arthritis	R	6 mths								
	17	60	M	Osteo-Arthritis	R	1 yr								
	18	65	M	Osteo-Arthritis	R	10 mths								
	20	72	F	Osteo-Arthritis	L	2 yrs								

Results

Of the eighteen patients taken into the trial, of whom one in each group had two hips involved, five cases had their treatment discontinued between the 8th and the 20th day of the trial on account of toxic effects (three in the cortisone group with oedema of the legs plus chest infection, plus venous thrombosis, urinary infection, and prostatic obstruction respectively, and two in the codeine group with coronary thrombosis and severe oedema of legs). This left 13 patients (15 hips) completing the trial: these two residual groups are comparable with those at the beginning of the trial (Table I).

Table II (opposite) shows that there was no real difference between the patients treated with cortisone and those treated with codeine. There was increase in movement up to 6 months, but this was not sustained in the group as a whole by the year. Pain, however, was improved, as was also the functional assessment.

Summary

(1) Two small comparable series of cases of hip disease, one treated with cortisone and the other with a codeine mixture before, during, and after a Judet arthroplasty, are discussed, and the results are compared.

(2) After 6 months and one year there was no difference between the two groups in regard to range of movement and degree of pain, and the final function was equal in both groups.

(3) No severe toxic effects were noted and there was no trouble with wound healing or wound infection.

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TABLE II
POST-OPERATIVE RESULTS

Drug	Hip No.	Pre-operative		After 3 months		After 6 months			After 12 months	
		Flexion	Pain	Post-operative Flexion	Post-operative Pain	Post-operative Flexion	Post-operative Pain	Distance Walked (m/s)	Post-operative Flexion	Assessment
Cortisone	1 L	50	3	70	0	70	1	$\frac{1}{4}$	45	Fair
	2 R	85	2	80	0	90	1	$\frac{1}{4}$	60	Fair
	3	80	3	90	2	80	2	$\frac{1}{2}$	70	Fair
	4	80	3	80	1	100	1	100 yds	20	Fair
	6	90	3	80	1	100	0	$\frac{1}{2}$	90	Good
	9	30	3	75	0	70	1	1	80	Fair
	10	75	3	80	0	100	0	1	80	Good
	Average	70		78		87			63.4	
Codeine	11 L	80	3	80	3	80	2	$\frac{1}{2}$	80	Fair
	12 R	60	3	75	0	90	1	$\frac{1}{2}$	90	Fair
	13	15	3	40	0	40	0	house-bound	25	Fair
	14	40	3	90	1	100	0	3	100	Fair
	16	80	2	90	0	100	0	2	90	Good
	17	70	2	80	0	90	0	$\frac{1}{2}$	90	Good
	18	90	3	90	0	90	1	$\frac{1}{2}$	90	Poor
	20	90	2	40	2	90	1	100 yds	30	Good
	Average	66		73		85			74	

Cortisone, ACTH, and Other Therapeutic Measures in the Chronic Rheumatic Diseases.

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Comparaison de l'acétate de cortisone et d'une mixture de codéine comme traitement adjuvant à l'arthroplastie de Judet

RÉSUMÉ

(1) Deux petites séries semblables de cas de coxalgie l'une traitée à la cortisone et l'autre avec une mixture de codéine avant, pendant et après une arthroplastie de Judet, sont discutées et les résultats comparés.

(2) Après six mois et un an il n'y avait aucune différence entre les deux groupes en ce qui concerne l'amplitude

de mouvement et l'intensité de la douleur et à la fin la fonction était égale dans les deux groupes.

(3) Aucun effet toxique sévère n'avait été constaté et il n'y avait eu aucun ennui au point de vue de la cicatrisation ou de l'infection.

Comparación del acetato de cortisona y de una mixtura de codeína como tratamieto adyuvante a la artroplastía de Judet

SUMARIO

(1) Se discuten y se comparan los resultados de dos pequeños grupos semejantes de casos de coxalgia, el uno tratado con la cortisona y el otro con una mixtura de codeína, antes, durante y después de una artroplastia de Judet.

(2) Después de seis meses y de un año no hubo diferencia alguna entre los dos grupos respecto a la amplitud del movimiento y la intensidad del dolor, y la función final fué igual en ambos grupos.

(3) No se notó ningún efecto tóxico grave y no hubo dificultades con cicatrización o con infección.