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A Case of Isolated Adrenocorticotrophic Hormone Deficiency Presenting with Gastrointestinal Symptoms

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Isolated ACTH (adrenocorticotrophic hormone) deficiency is a rare cause of secondary adrenocortical insufficiency. The clinical features of secondary adrenal insufficiency differ from those of primary adrenocortical insufficiency in that pituitary secretion of ACTH and β -lipotropin is deficient and thus hypersegmentation is not present. Prominent features are weakness, lethargy, easy fatigability, anorexia, nausea, and occasionally vomiting. Volume depletion, dehydration, and electrolyte abnormalities are rarely observed. Usually, hypotension is not present except in acute presentations. Recently, we experienced a 48-year-old woman admitted because of nausea, vomiting, and diarrhea. The level of basal plasma cortisol was low, and the level of plasma ACTH and cortisol decreased responding to combined pituitary stimulation test. Plasma ACTH concentration remained low even after intravenous injection of corticotropin releasing factor. It suggested that the defect of ACTH secretion was apparently due to intrinsic pituitary dysfunction rather than hypothalamic disease. Brain magnetic resonance imaging failed to reveal any radiological abnormalities of the sellar or suprasellar area. (**Kor J Gastroenterol 1999;33:129 - 134**)

Key Words: Isolated ACTH deficiency

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1954 Steinberg 1 true pituitary Addison's disease

Fig. 1. Esophagogastroduodenoscopic finding. Esophagogastroduodenoscopic finding shows no specific gross abnormality except duodenitis.

Fig. 2. Colonoscopic finding. Colonoscopic finding shows no specific gross abnormality.

Fig. 3. MRI finding. Brain MRI shows no gross abnormality.

Table 1. The Results of Combined Pituitary Stimulation Test

Time (min)	Basal	15	30	60	120
Sugar (mg/dL)	95	61	45	60	82
Cortisol (ng/mL)	17.68	29.15	51.77	79.22	72.66
ACTH (pg/mL)	23.52	19.27	47.22	8.60	9.23
TSH (μIU/mL)	1.45	16.88	14.96	12.32	6.71
Prolactin (ng/mL)	20.89	209.51	379.08	635.55	453.81
GH (ng/mL)	0.72	0.62	7.92	24.21	8.83
FSH (mIU/mL)	25.46	36.44	37.21	44.23	47.65
LH (mIU/mL)	8.36	24.34	31.55	27.49	24.39

Normal response: cortisol, an absolute value of 180 ng/mL or an increment greater than 100 ng/mL; ACTH an absolute value of 100-200 pg/mL or an increment greater than 3 to 5 times of baseline; TSH, an increment greater than 2 to 4 times of baseline; prolactin, an increment greater than 5 to 8 times of baseline; GH, a absolute value of 7 ng/mL or an increment greater than 5 ng/mL; FSH, an increment greater than 50% of baseline; LH, an increment greater than 2 to 3 times of baseline; ACTH, adrenocorticotrophic hormone; TSH thyroid-stimulating hormone; GH, growth hormone; FSH, follicle-stimulating hormone; LH, luteinizing hormone.

Table 2. The Results of CRH Stimulation Test

Time (min)	Basal	30	60	90	120
ACTH (pg/ml)	0.32	1.67	1.37	1.25	1.30
Cortisol (ng/ml)	24				32

CRH, corticotropin-releasing hormone; ACTH, adrenocorticotrophic hormone.

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가
160 cm, 52 kg
100/60 mmHg,
92 / , 20 / , 36.2
가28
1
가
9,600/ μL(39%, 29%, 6%,
26%), 14.6 g/dL, 43.8%,
가
322,000/ μL
8.6 mg/ dL, 3.0 mg/dL, 85 mg/dL, BUN/Cr
1995 5 6.4/0.7 mg/dL, 5.9 g/dL, 3.6 g/dL,
AST/ALT 18/18 IU/L
Na+ 135 mM/L, K+ 3.9 mM/L, chloride 98 mM/L,
tCO2 24 mM/L T3
2 1.6 ng/mL, free T4 1.82 ng/dL, TSH 1.6 μIU/mL

thyroglobulin ,
 microsomal . ,
 가 .10
 (steatorrhea)
 (Fig. 1), -S
 (Fig. 2), 11-13 .
 가 (adrenalectomized rat) 가
 가 cortisol 1.02 µg/dL(가
 8), ACTH 10.78 pg/nl(8)
 (Table 1) , 가
 ACTH
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 (Table , (85 mg/dL).
 2) ACTH ,
 가
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 .9 .14
 (primary adrenocorti- 3가
 cal insufficiency) , , Sheehan
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 - - (renin-angiotensin-al 가
 dosterone system)가 가 . 가
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 , , ,16
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 (adrenal crisis) , ,
 (polyglandular deficiency) 가

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corticotropin producing cell .16
(lymphocytic hypophysitis)

18
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microsomal
가
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1989;4:153-157.

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